
1885
1885
WM. ROBERTSON
MANUFACTURER OF
PUMPS
OAKVILLE ONT.

1885

ILLUSTRATED CATALOGUE

AND

PRICE LIST

OF

PUMPS

SINKS, CAST-IRON PIPES, ETC.

MANUFACTURED BY

W. ROBERTSON

OAKVILLE, - - ONTARIO

McKAY BROS., PRINTERS, TORONTO

OFFICE OF

THE OAKVILLE PUMP WORKS

OAKVILLE, ONTARIO, CANADA

March 20th, 1885.

Having added many new Pumps and Hydraulic Machines to my manufactures, and having largely increased my assortment of Iron Pipe and Fittings, for Sanitary and Green-house purposes, I find it necessary to issue a new and revised Catalogue and Price List.

It is now ten years since "The Oakville Pump Works" commenced operations, and I cannot refrain from expressing my gratitude to my customers and the Trade generally for the liberal patronage they have given me. The business in Canada was commenced in the face of very great difficulties, and a most determined and keen opposition from the wealthy Manufacturers of the United States. I determined to overcome these difficulties, and met all honorable competition in terms, prices and qualities, so fully, that my business is now established the entire breadth of the Dominion, from the Atlantic to the Pacific Oceans. British Columbia, Manitoba, and the Maritime Provinces, have warmly supported my efforts. My goods having secured the reputation of superiority, I beg to assure the Trade that my constant effort will be to maintain this reputation in the future, and by supplying the best of material combined with the most skilled workmanship obtainable, to retain the confidence and patronage of my customers.

Discount Sheets and Supplements of New Goods and Prices will be issued as circumstances require, and my patrons will immediately receive the benefit of any change or reduction.

As several editions of my Catalogue have now been issued, it will be necessary, where goods are not ordered from THIS *edition, to quote date of Catalogue from which order is given.*

Truly yours,

WM. ROBERTSON.

SPECIAL NOTICES

All Price Lists, where they differ, in whatever Catalogue found, from those enunciated in this Book, Discount Sheets, Etc., are hereby made null and void.

The great variety of goods manufactured at these Works, has rendered it necessary to adopt a system of designating them by FIGURES, placed directly over the cut of each article; and the sizes of each figure by NUMBERS. If my customers, in sending orders, will merely give the Figure and Number of article desired, and date of Catalogue from which ordered, much written description, and oftentimes vexation and annoyance, will be thus avoided.

I have endeavored to make the description of each article in the following pages so clear that no practical person ordering goods is liable in any way to make mistakes, or in placing them (when received) in successful operation. In case Pumps are required for particular or peculiar purposes, any additional information will be promptly supplied on application.

TERMS

Draft at four months to our regular castomers in the Trade, or Note where there is no chartered Bank in the locality.

All goods shipped at Buyer's risk, and delivered at Oakville Station, G. T. R.

Cases, when not specially exempted, charged at cost.

Post Office Orders to be made payable at Oakville Post Office, and Cheques to be payable at par in Toronto, otherwise Bank collection added.

A FEW SUGGESTIONS AND REMARKS UPON THE PUMPS MADE AT THESE WORKS

The Pumps made in this establishment are now neither new to the Trade, or untried, but have been successfully manufactured for ten years. All of them are designed to gratify the eye, with a proper regard for strength and durability, and furnished with brass valve seats and the latest improvements. The Cistern Pumps are made anti-freezing by raising the lever to its extreme height, which trips the lower valve, and so allows the water to pass off the machine. The Well Pumps are furnished with leak holes below the frost line and above the cylinder, and the water by this means is drained off immediately the pumping ceases, so that there is actually no water to freeze. A wooden plug can be inserted in this leak hole during the non-freezing months, but I do not recommend it, as keeping the leak always open will give cooler, fresher water in summer, and no risk is run through forgetfulness, should a sudden and early frost occur.

It should always be borne in mind that Pumps will not draw more than 32 feet, owing to the atmospheric pressure, therefore for deep wells the cylinder must be lowered, and the nearer the bottom of the well the cylinder is placed, the better. For rod in deep wells, gas-pipe is preferable to solid iron, the latter being so much heavier, and consequently an increase to the weight of the lift.

All Cylinders are bored perfectly true, polished like a mirror, and furnished with closely fitting plungers ; the valve seats being of brass.

Every article is subjected to a keen inspection before leaving the Works, all couplings tested by exact gauges, and all drilling is done to pertect templets. As all corresponding parts are made identical in every Pump, repairs will always fit, and precise duplicates can be supplied.

Every possible care is taken in the manufacture of the Force Pumps, and none of this class are allowed to leave the Machine Shop until they have been rigidly and completely tested.

All the Pumps will do what they are represented capable of doing, but it is all important that the tubing attached should be perfectly air-tight. When iron pipe is used, let the joints be screwed up tightly with gas-fitter's tongs. When lead pipe is used, and after the soldering is finished, it will be well to fill it with water, when it will be ascertained if the pipe is completely tight.

Whenever Pumps are required for pumping Hot Liquids, always order them fitted with Metallic Plungers and Valves—the expansion of metals under varying degrees of heat rendering it necessary that brass, in its various mixtures, should be used in conjunction with iron.

Any further information regarding Pumps, Etc., will be most cheerfully given, on application.

Improved Pitcher-Spout Pump

Fig. 20

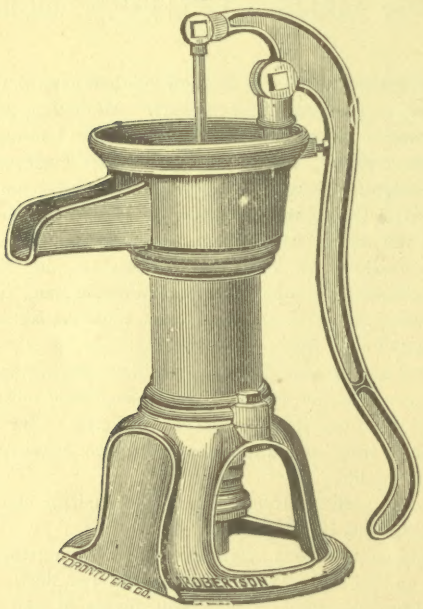


Fig. 20 illustrates my Improved PITCHER-SPOUT PUMP, with open top fulcrum or bearer, forming a complete circle around the top of the stock. The lever can be changed or revolved to any desired position, for right or left hand use, by simply loosening the set-screw. It is fitted with suitable coupling for either lead or iron pipe. The cylinder is bored perfectly true, and highly polished. Any part can be duplicated. Four sizes of this Pump are made.

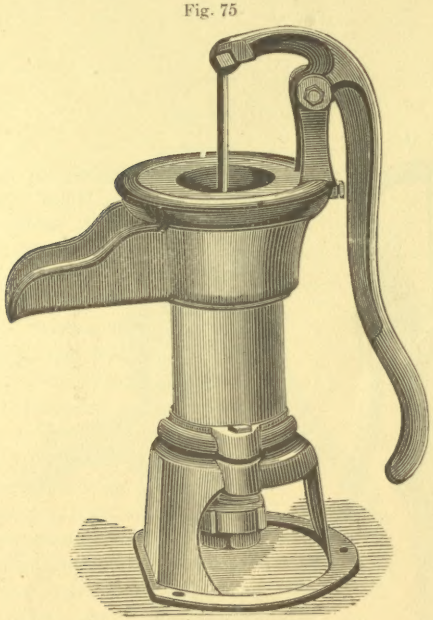
SIZES, CAPACITY AND PRICES

No. 1,	2½	inch	calibre,	capacity	per	stroke	1-10	gallon,	1 or 1¼ inch pipe	$4 25
" 2,	3	"	"	"	"		1-7	"	1 or 1¼ "	4 75
" 3,	3½	"	"	"	"		1-5	"	1 or 1¼ "	5 25
" 4,	4½	"	"	"	"		1-3	"	1½ or 2 "	6 25

A No. 4 of this Pump is made with a round spout, designed to take 3 inch iron pipe, and has been especially constructed for pumping oil. They are also used for filling tanks of portable engines. Price as above, fitted for 2 inch pipe.

Improved Close-Top Pitcher-Spout Pump

Fig. 75



The above cut represents my new and Improved CLOSE-TOP PITCHER-SPOUT PUMP, which I take pleasure in presenting to the notice of the Trade and the public in general, trusting that its advantages will be obvious to all, among which may be mentioned the following:

It prevents the accumulation of dust and other extraneous matter in the Pump, to the detriment of both the pump and the water, as is the case in the same style of pumps as usually made with open tops. It also prevents the water from spouting up or filling over when in use, and presents a better appearance to the eye. It has all the modern improvements in construction and finish, and is fitted for either lead or iron pipe.

SIZES, CAPACITY AND PRICES

No. 1,	2½	inch calibre,	capacity per stroke	1-10	gallon,	1	or 1¼	inch pipe.....	$4 25
" 2,	3	"	"	1-7	"	1	or 1¼	"	4 75
" 3,	3½	"	"	1-5	"	1	or 1¼	"	5 25
" 4,	4½	"	"	1-3	"	1¼	or 2	"	6 25

In ordering, please state whether you wish these Pumps fitted with lead or gas pipe connections.

CLOSE-TOP CISTERN PUMP.

Fig. 21

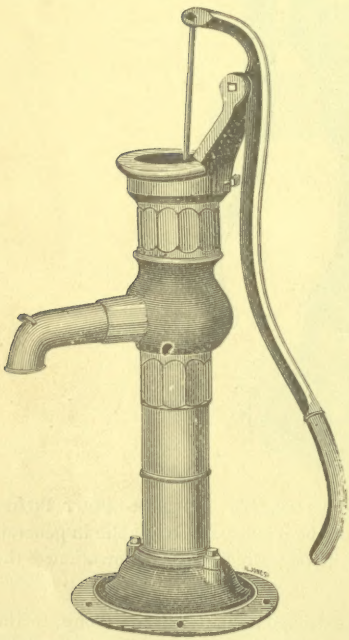


Fig. 21 represents my new style of CLOSE-TOP CISTERN PUMP. It has a strongly bolted base, with coupling attachments below, either for iron or lead pipe. There is an adequate reservoir above the spout to retain any surplus water caused by fast pumping, and which removes the possibility of overflow. The cylinder is bored perfectly round and straight, and afterwards polished thoroughly, causing the pump to work with ease and efficiency. The fulcrum and lever revolve, and can be adjusted to any position desired by simply turning the set-screw under the lever. By loosening the set-screw the plunger can be withdrawn, and the lower valve is accessible by unscrewing the two bolts connecting the cylinder to the base, so that the suction pipe and connections need not be disturbed in taking the whole pump apart. To prevent freezing, the lever should be raised to its extreme height, which opens the lower valve, and so permits the water to run back into the well or cistern. This, and every pump of my manufacture, is fitted with brass valve seat; and for pumping hot or corrosive liquids, metallic valves throughout will be furnished.

Three sizes of these Close-Top Cistern Pumps are made, in iron or brass.

SIZES, CAPACITY AND PRICES

			Iron.	*Brass Cyl.*
No. 1,	2½ inch cylinder,	capacity per stroke 1-10 gallon,	1 or 1¼ inch pipe..	$4 50	$7 00
" 2,	2¾ " " "	" 1-8 "	1 or 1¼ " ..	5 00	8 00
" 3,	3 " " "	" 1-6 "	1 or 1¼ " ..	5 50	10 00

Bracket Close-Top Cistern Pump

Fig. 116

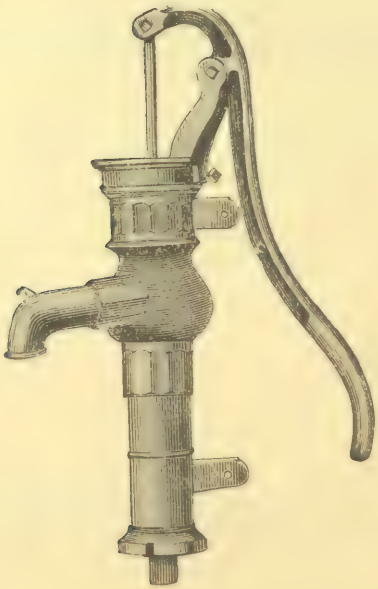


Fig. 116 fully illustrates my new style of BRACKET CISTERN PUMP. As will be readily seen, it is especially adapted to places where a pump with a flanged base could not be used. It can be screwed to the wall or a post, as found most convenient, and take up the least possible space. To prevent freezing, the lever is raised to its full height, which trips the valves and lets the water all run out of the pump. It has all the specialties explained under Fig. 21.

SIZES AND PRICES

				Iron.	*Brass Cyl.*
No. 1, 2½ inch cylinder,	capacity per stroke	1-10 gallon,	1 or 1¼ inch pipe.	$4 50	$7 00
" 2, 2¾ "	"	1-8 "	1 or 1¼ "	5 00	8 00
" 3, 3 "	"	1-6 "	1 or 1¼ "	5 50	10 00

DRIVE WELLS

The following suggestions on DRIVEN WELLS will be found of value to Well-Drivers, and is the embodiment of our answers to many correspondents on the subject.

Driven Wells cannot be successfully made in stony soil, or where the strata of clay is too thick to be penetrated. Water is frequently obtained above clay or rock formation, and below them it is found in abundance and of the best quality.

The clay and quicksand can be easily penetrated by boring with an augur a short distance into the clay, or driving down a tube open at the lower end, withdrawing it at intervals and extracting the accumulations. This operation can be repeated until this strata is drilled. It will require care not to drive too deep into the adhesive clay, so as to prevent ready withdrawal of the implement. The well augurs now used cut a core in the earth, and assist much in the work of driving. A peculiar gargling sound in the tube will easily determine when water is reached. If the quality of the water is inferior, then drive deeper and into a better strata.

For driving, attach a slotted point without any screen, open at the bottom, to a length of gas pipe, and to the end of this screw on the driving cap. Place it in a vertical position over the point where it is desirable to obtain a well. Then, with the maul or heavy hammer, strike squarely upon the cap, and continue striking until the pipe is driven down as far as desired. After driving about twelve inches, withdraw the tube and shake the contents out, which will give an idea of the nature of the soil being penetrated. Moderate blows are better than heavy, swinging blows, as the tube will enter the ground faster, and the work be done less laboriously. The tube should be steadied, kept in an upright position, and frequently turned with tongs or wrench while being driven. When the tube has been driven down as far as desired, the filter section can then be introduced into the hole, and any common pump connected, and the well pumped free of the particles of sand which may have accumulated in the tube. Then, for a permanent pump, either Figs. 20, 75, 21, 114, 108, 115 or 107 will give satisfaction.

For the lower end of the tube use one of the Filter Points shown on the next page, either Fig. 82 or 95.

Drive Well Filter Points

Fig. 82

Fig. 82 is a Washer Point, suitable for gravel or stony stratas. It is made of Galvanized Gas Pipe, and the brass gauze is held in its place by Brass Washers, countersunk into the pipe.

SIZE AND PRICE

1¼ inch $2 75

Fig. 96

Fig. 96 is constructed for use in fine sand stratas. It is made of Galvanized Gas Pipe, covered with brass gauze and a perforated jacket. A large quantity of these points are manufactured, and give unqualified satisfaction.

1¼ inch $3 25

Steel Driving Caps

For 1¼ inch Pipe $3 00

SPECIAL DRIVE WELL PUMP

With Wrought Iron Set Length

Fig. 114

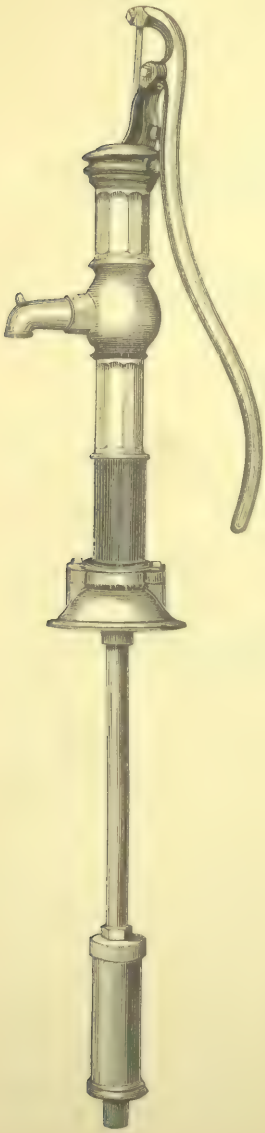


Fig. 114 represents my SPECIAL DRIVE WELL PUMP fitted with wrought iron set length, and equally well-adapted for shallow Wells and outdoor Cisterns. The extension pipe is made to pass up through the lower portion of the stock, and connect near the spout by a gas-pipe thread cut in the stock. By this appliance the whole stock does not need to be filled, and consequently the water is raised more quickly and easily than in other Pumps. The Cylinders are fitted with Improved Sand Valves and Brass Seats, enabling them to free themselves from all sand. There is no danger from frost, as the water, when the Pump is not in use, is allowed to run back below the freezing point.

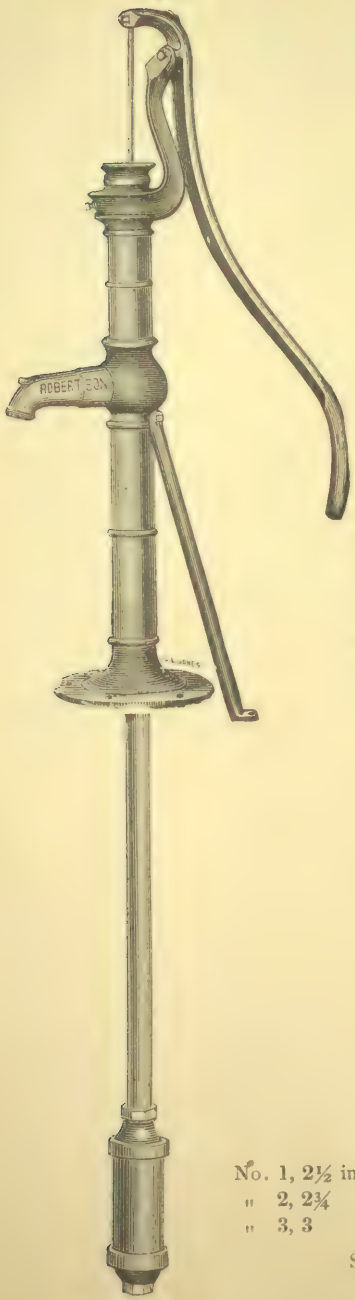
Braces are furnished, when required, at an additional cost of 50 cents to the following list.

SIZES AND PRICES

No. 1,	2½	inch	cylinder,	suitable for	1¼	inch	pipe..$7 75
" 2,	2¾	"	"	"	1¼	"	.. 8 00
" 3,	3	"	"	"	1¼	"	.. 8 50

Standard and Cylinder only, less 50 cents

Fig. 108



SHALLOW WELL PUMP

With Latest Improvements

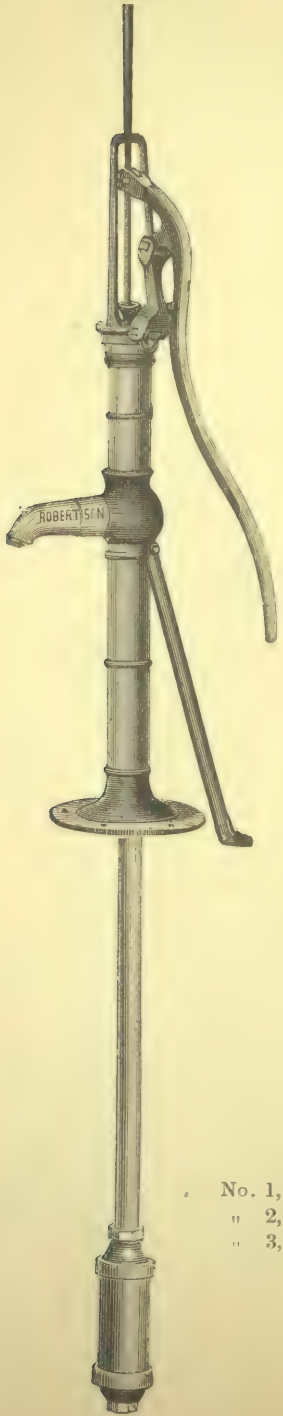
Fig. 108 represents my SHALLOW WELL PUMP made for extension pipe to pass up through the lower portion of the stock, and connect near the spout by a gas-pipe thread cut in the stock. The whole stock, by this appliance, does not need to be filled, and consequently the water is raised more quickly and easily than in other Pumps. It is supplied with a brace, is strongly built, and is fully adapted for Drive Wells, as well as ordinary Shallow Wells.

SIZES AND PRICES

No. 1,	2½	inch cylinder,	suitable for	1¼	inch pipe $8 25
" 2,	2¾	" "	"	1¼	" 8 50
" 3,	3	" "	"	1¼	" 9 00

Standard and Cylinder only, less 50 cents.

Fig. 115



Special Improved Tight Top Well Pump

WITH WROUGHT IRON SET LENGTH

Fig. 115 represents my SPECIAL IMPROVED TIGHT-TOP WELL PUMP, which is adapted for Drive and Shallow Wells and out-door Cisterns. The improved movement shown in the lever, bearer, and top will be fully appreciated by the Trade, and has been adopted on a great many of the Pumps manufactured here. The Tight-Top is to prevent sticks and stones from being thrown into the Top and interfering with the proper working of the Pump. The extension pipe is made to pass up through the lower portion of the stock, and connect near the spout by a gas-pipe thread cut in the stock, similar to Fig. 114. Braces are also furnished with this Pump.

SIZES AND PRICES

No. 1, 2½ inch cylinder, suitable for 1¼ inch pipe	.....	$9 25
" 2, 2¾ " " " 1¼ "	.....	9 75
" 3, 3 " " " 1¼ "	.....	10 25

Standard and Cylinder only, less 50 cents.

SHALLOW WELL PUMP

With Vacuum Chamber

Fig. 107

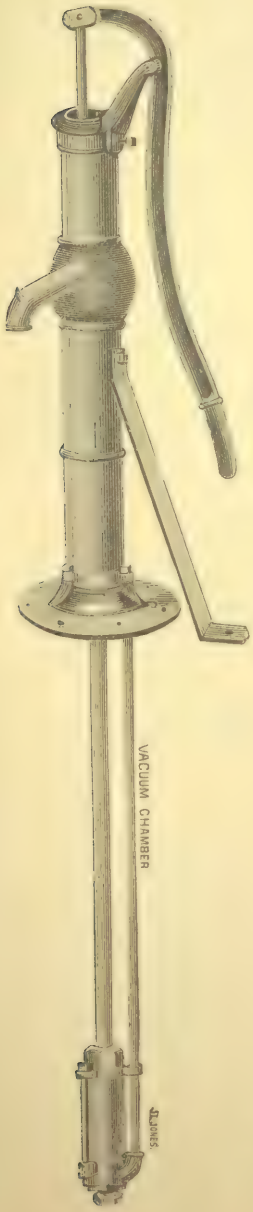


Fig. 107 represents the Shallow Well Pnmp, with Vacuum Chamber. It has the improvements described under Fig. 108 with the addition of the Vacuum Chamber, which will give a steady flow of water, and prevent any jerking action when being operated quickly. This Pump is well adapted to Drive and Open Wells not exceeding 25 feet in depth.

SIZES AND PRICES

No. 1, 3	inch cylinder,	suitable for	1¼	inch	pipe	....	$10 00
" 2, 3½	"	"	"	1¼	"	....	10 50
" 3, 4	"	"	"	1½	"	....	12 00

ANTI-FREEZING WELL PUMP

With Wrought Iron Set Length

Fig. 24

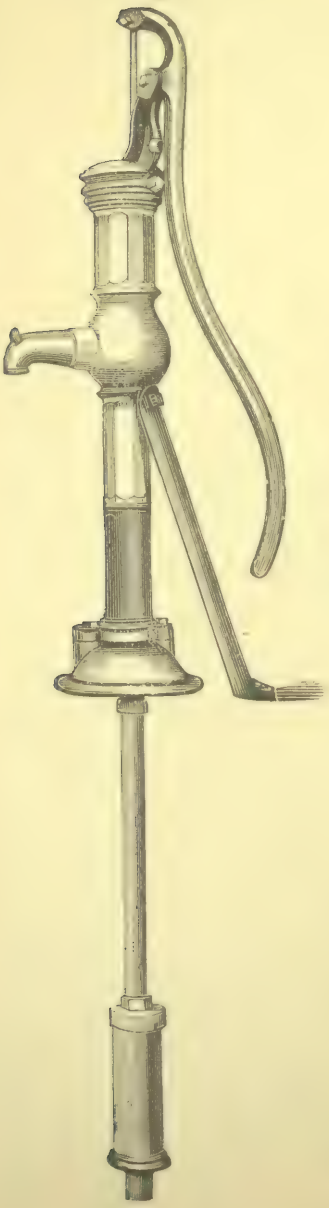


Fig. 24 represents my ANTI-FREEZING WELL PUMP, with Revolving Fulcrum, Wrought-Iron Set-Length three feet below the base, which places the cylinder beyond the reach of frost, as the water is allowed to run back below freezing point. This Pump is especially adapted to meet the requirements of an excellent Farm or House Pump, in wells of medium depth. In wells of 35 feet or over, it is especially recommended that the cylinder be placed as near the bottom as possible.

A Tight Top, on the same principle, and with the same improvements as shown in Fig. 115, will be fitted to this Pump, when so ordered, at an additional cost of $2.00 to the following list.

SIZES AND PRICES

No. 1, 3 inch cylinder, suitable for 1¼ inch pipe $11 50

No. 2, 3½ inch cylinder. suitable for 1¼ inch pipe 12 00

No. 3, 4 inch cylinder, suitable for 1¼ or 1½ inch pipe 13 00

Standard and Cylinder only, less 50 cents.

Check Valve and Strainer for above Pumps ... $1 50

Deep Well Standard and Cylinder

OPEN TOP

Fig. 113

Fig. 113 represents my STANDARD AND CYLINDER designed for use in wells ranging from 25 to 120 feet in depth. It is made extra strong, and is cut for wrought iron pipe in the stock near the spout. It is anti-freezing, as no water is contained in the stock. A strong Brace is furnished with this Pump, although not shown in cut. A cylinder 15 inches long and 3 inches bore, cut for 1¼ inch pipe, is sent with this Pump unless otherwise ordered.

PRICE

Standard and Cylinder	$14 00
Check Valve and Strainer for above Pump	1 50

Deep Well Standard and Cylinder

Fig. 117 TIGHT TOP

Fig. 117 represents my TIGHT TOP STANDARD AND CYLINDER designed for use in wells ranging from 25 to 120 feet in depth. It is made exactly the same as Fig. 113, but has a Tight Top, and the improved movement in connection with lever, rod and bearer. A cylinder 15 inches long, and 3 inches bore, cut for 1¼ inch pipe, is sent with this Pump unless otherwise ordered.

PRICE

Standard and Cylinder.....$16 00

Check Valve and Strainer for above Pump.....$1 50

Standard and Cylinder, with Two Braces

Fig. 76

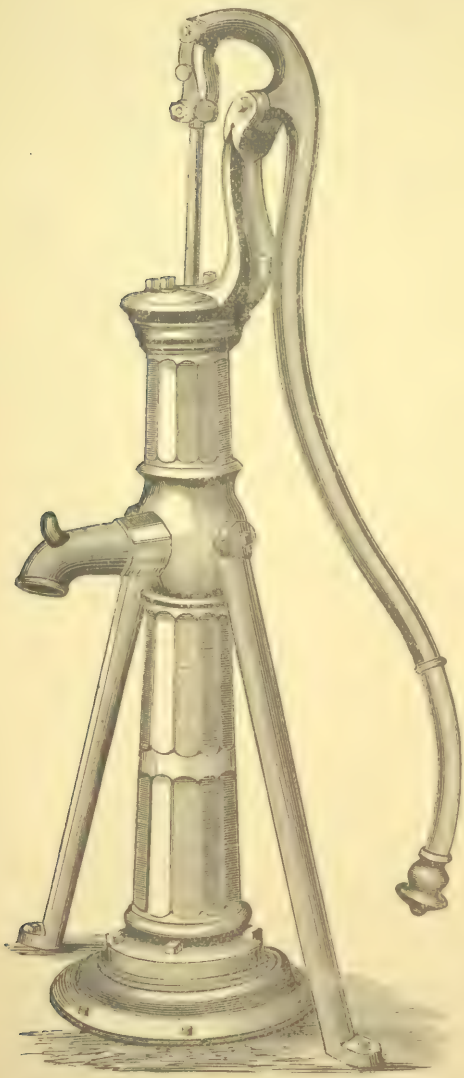


Fig. 76 is an accurate representation of my STANDARD WELL PUMP. It is very strong and compact, and well calculated to endure, without injury, the hard usage always received by a Street or Public Pump, and is fully adapted for all positions where it is necessary to raise large quantities of water. In addition to an unusually large base, are two large and strong braces, which, bolted firmly to the platform of the well, effectually prevent all possibility of the Pump working loose under the hardest legitimate test to which it may be subjected. The Bearer revolves to any desired position; it is also provided with a Rubber Buffer, which obviates the concussion at the close of each stroke, and absolutely prevents the breakage of the lever by any carelessness. This Pump is recommended as suitable for any depth of well, short of 150 feet, and will be guaranteed to give good satisfaction in its use.

Rods, with necessary pipes and connections for wells of any depth, will be furnished at reasonable rates.

I make six sizes of cylinders suitable for this Pump, ranging from 2½ to 5 inches, either in Brass or Iron. A 3 inch cylinder, of ample stroke, will be sent with this Pump, unless otherwise ordered. For full particulars of other cylinders see pages 28 and 29.

SIZE AND PRICE

Standard with Cylinder, suitable for 1½ inch pipe $20 00
Check Valve and Strainer 1 75

NOTE.—Since going to press I have changed the above lever, top and bearer, to the new improvement, similar to that shown in connection with Fig. 117.

SHALLOW WELL FORCE PUMPS

With Double Acting Brass Cylinders

Fig. 109

Fig. 109 represents a SHALLOW WELL FORCE PUMP, with Double Acting Brass Cylinder, adapted for wells not exceeding 25 feet in depth. This Pump is very light and easy to handle, still it is strong and durable; the base plate and bearer being united by four wrought iron columns arranged to be firmly clamped together with jam nuts. The vacuum chamber gives a steady flow of water through the suction pipe, and the hollow piston air chamber gives a steady flow through the discharge pipe. A leak hole is made below the freezing point so that the water can run off immediately on ceasing pumping. These Pumps can be fitted for wind-mill attachment, when so ordered, at an additional cost of $1.00.

SIZES AND PRICES

No. 1, 3 inch cylinder, with 5½ feet set length, for 1 inch pipe $14 75

No. 2, 3 inch cylinder, with 8 feet set length, for 1 inch pipe. 15 75

No. 3, 3½ inch cylinder, with 5½ feet set length, for 1 or 1¼ inch pipe 15 50

No. 4, 3½ inch cylinder, with 8 feet set length, for 1 or 1¼ inch pipe 16 50

No. 5, 4 inch cylinder, with 5½ feet set length, for 1½ inch pipe 20 00

No. 6, 4 inch cylinder, with 8 feet set length, for 1½ inch pipe 21 50

DEEP WELL FORCE PUMPS

With Double-Acting Brass Cylinders

Fig. 110

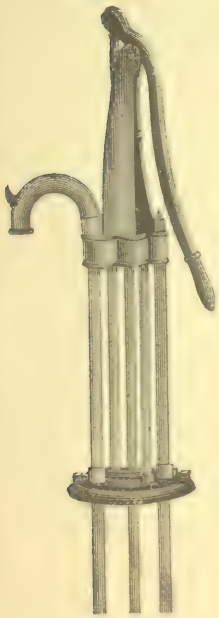


Fig. 110 has all the appliances of Fig. 109, and is constructed in a similar manner, except that the cylinders are divided for deep wells, the lower one being submerged in the well. The lower cylinders will be fitted for Drilled Wells of any length or bore, when required.

SIZES AND PRICES

With Brass Cylinder, Common Plunger, and Bolted Caps.

No. 1, 3 inch cylinder, for 5½ inch drilled wells..... $15 00
" 2, 3½ " " " 6 " " " 16 00

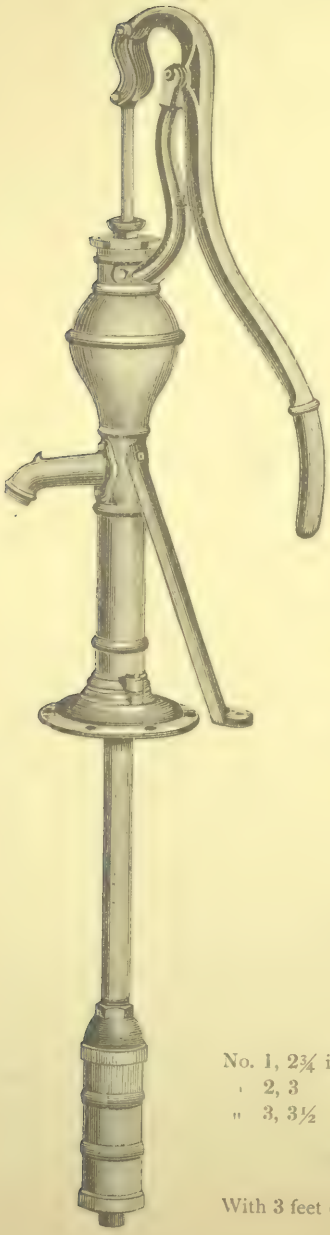
With Brass Cylinder, Nuts to screw inside, and Water Packing Plunger.

No. 3, 2½ inch cylinder, for 3¼ inch drilled wells..... $19 00
" 4, 3 " " " 3¾ " " " 20 00

WELL AND FORCE PUMP

With Wrought Iron Set Length

Fig. 6



The annexed cut represents my WELL AND FORCE PUMP, and is intended to meet the demands of the Trade for a *cheap* Force Pump.

The Stock and Air-Chamber are made in one piece, with a Tube extending downwards through the latter, preventing the escape of air from the chamber and providing the best possible guide for the piston rod below the brass stuffing box in the cap.

The Cylinder is placed three feet below the Base or Platform, with a vent hole just above the Cylinder, to allow the water to escape at that point. It is, therefore, impossible to freeze the Pump.

The Screw on the Air-Chamber should be tightened when used as a Force Pump, and loosened when used for common Well Pump purposes.

The Spout is fitted to attach hose for washing carriages, windows, lawns, etc.

This Pump is suitable for Wells up to 50 feet in depth.

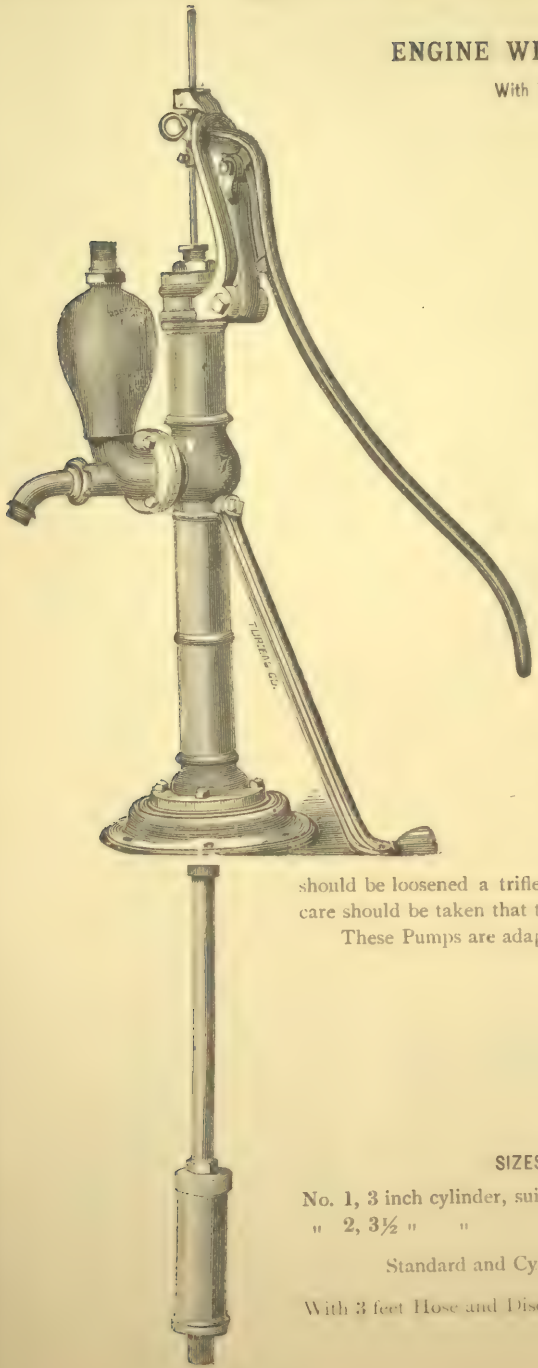
SIZES AND PRICES

No. 1,	2¾	inch cylinder,	suitable for	1¼	inch pipe	$13 00
" 2,	3	" "	"	1¼	"	13 50
" 3,	3½	" "	"	1¼	"	14 50

Standard and Cylinder only, less 50 cents.

With 3 feet of Hose and Discharge Pipe, list price extra . . . . $ 3 00

Fig. 118



ENGINE WELL AND FORCE PUMP

With Wrought Iron Set Length

Fig. 118 represents my ENGINE WELL AND FORCE PUMP, with wrought iron set length, and Improved Movement in connection with rod, lever and bearer. It combines the principles of atmospheric pressure, or suction, with the Force Pump, and having an Air-Chamber connected with it, is calculated to throw a constant stream. It is adapted not only to the ordinary uses of a Well Pump, but also the washing of windows, buildings, and vehicles, and the extinguishing of fires. With sufficient hose, water can be carried over very large premises.

When used as a Well Pump the nut on the Air Chamber should be loosened a trifle; when used as a Force Pump, care should be taken that the nut be screwed down tight.

These Pumps are adapted for Wells up to 150 feet deep.

SIZES AND PRICES

No. 1, 3 inch cylinder, suitable for 1¼ inch pipe....$15 00
" 2, 3½ " " " 1¼ " 17 00

Standard and Cylinder only, less 50 cents

With 3 feet Hose and Discharge Pipe, extra..... $ 3 00

Wind Mill Force Pump Standard

Fig. 30

Fig. 30 represents my new WIND MILL FORCE PUMP STANDARD, with top arranged to make connection with Wind-Mill power, and also to be used by hand when desired. The entire Pump is made heavy and strong, with a brace to hold it firmly while being worked. The spout is arranged for attaching hose, if desired. By means of a bolt or pin, the lever or handle is readily disconnected. This Pump is very extensively used throughout the country in connection with wind-engines, for irrigating, watering stock, filling tanks, etc., and has met with unqualified success.

SIZE AND PRICE

No. 1, Windmill Standard, complete as per cut, for 1¼ inch pipe.....$12 00

For iron cock with brass plug, add to list $3 00

The Cylinders to be used with above Pump will be found on pages 28 and 29.

Wind Mill Force Pump Standard

FOR DEEP WELLS

Fig. 111

Fig. 111 represents my Anti-Freezing WELL FORCE PUMP STANDARD in an improved form, being especially adapted for use with Wind-Mills. The air-chamber is combined in the Standard instead of being placed on the discharge. This Pump can be used for wells of any depth up to 200 feet. It combines the principles of atmospheric pressure or suction, with the Force Pump. Hose can be easily connected, and it is readily converted into a very efficient fire engine, or adapted to any of the many uses for which a first-class Force Pump is usually designed. It is tapped to receive the gas-pipe just below the spout.

SIZE AND PRICE

No. 1, Standard complete, as per cut $11 50

For Cocks, add $2.50 to list price

The Cylinders to be used with above Pump will be found on pages 28 and 29.

WIND MILL FORCE PUMP

Anti-Freezing with Three-Way Cock

Fig. 77

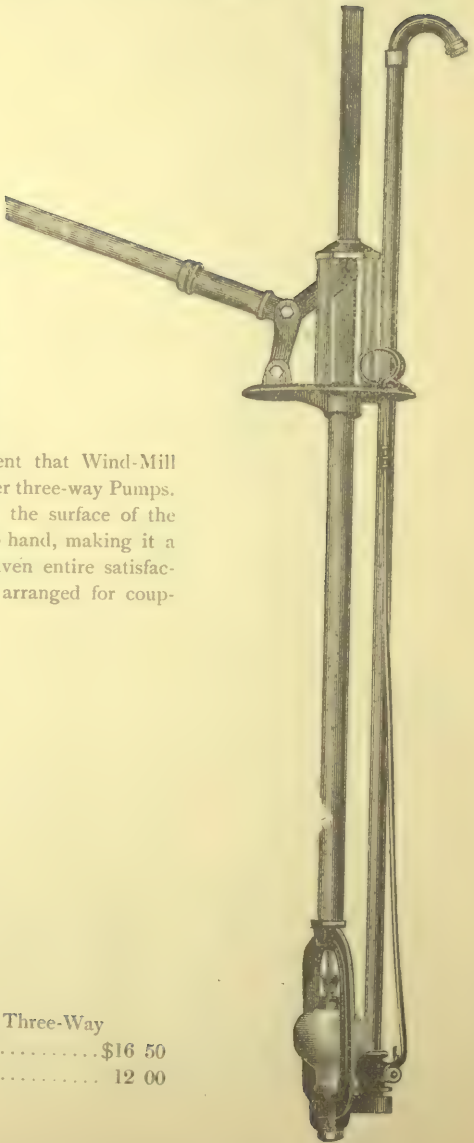


Fig. 77 represents my THREE-WAY WIND-MILL FORCE PUMP, having no Pump Standard. The Chamber and Three-Way Cock are four (4) feet below the base, and the Cylinder below that, rendering it impossible for the working parts to be affected by frost. This Pump works easily, and is so convenient that Wind-Mill dealers give it the preference over all other three-way Pumps. It is easily governed by the operator at the surface of the ground, and can be changed from mill to hand, making it a very desirable Pump, and one that has given entire satisfaction. When ordered, the spout will be arranged for coupling on hose.

SIZE AND PRICE

Complete, as shewn in cut, with 1 inch Three-Way Cock	$16 50
Without Three-Way Cock	12 00

The Cylinders to be used with above Pump will be found on pages 28 and 29.

New Anti-Freezing Wind-Mill Force Pump

FOR ELEVATING OR DELIVERING IT AT PLATFORM

Fig. 119

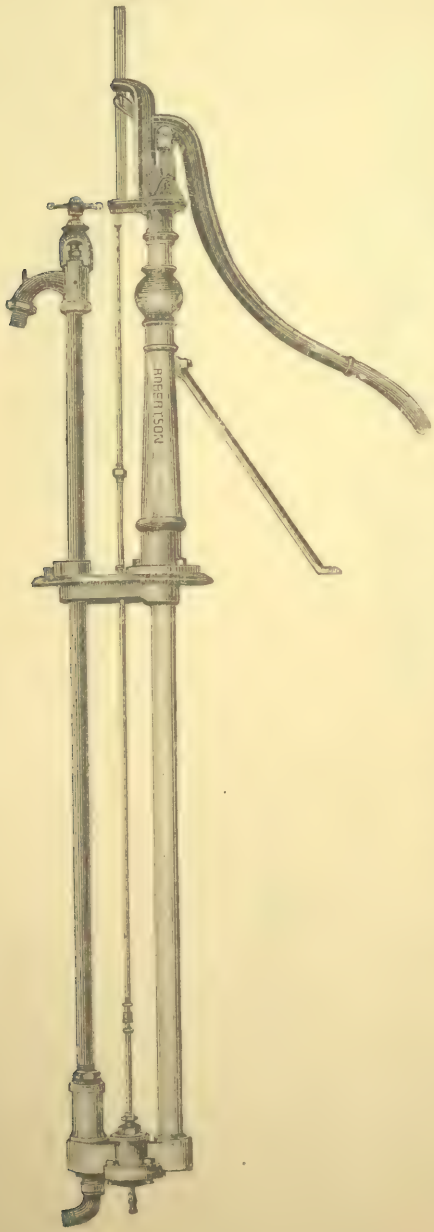


Fig. 119 represents my ANTI-FREEZING WIND-MILL FORCE PUMP, with Vertical Distributing Valve, and Brass Elbow Attachment at the bottom outlet. For the discharge 1¼ inch iron pipe is used, which is made in one piece, and held in place with a set screw at the platform, so that by merely unscrewing the coupling below and loosening the set screw at the base, the pipe can be pulled up and the valve and working parts examined and repaired, and the parts replaced without any trouble. For the Air-Chamber 2 inch iron pipe is used, which strengthens the set length and keeps the working parts in perfect line with each other. At the bottom outlet a Brass Elbow Union Attachment is used, which is more convenient in making the regular pipe connections than any other way. A Brass Stuffing Box is used above the spout, which prevents all leakage when hose is connected. The valve is opened and closed by turning the wheel above the stuffing box, as shown in cut. It is always fitted for ¾ inch hose coupling at the spout, and for 1 inch iron pipe at brass elbow attachment. The bottom flange is fitted for 1¼ inch suction pipe.

For Cylinders to go with this Pump, see pages 28 and 29.

PRICE

Complete, as above.....$16 50

CYLINDERS

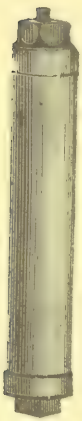
For Dug Wells

Fig. 27

For Sizes and Prices
see next page.

For Drilled Wells

Fig. 28



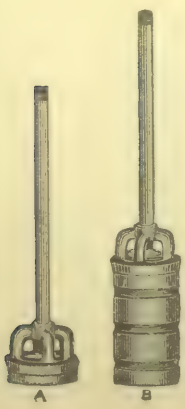
For Sizes and Prices
see next page.

For Wood Pipe

Fig. 92

SIZES AND PRICES

3	in.	7½ in.	stroke..	$3 50
3½	"	7½ "	" ..	4 00
4	"	7½ "	" ..	4 00



PLUNGERS

A. is an ordinary iron plunger, with leather packing, and used in the shallow well iron cylinder.

B. is the deep well plunger, with brass valve. The bottom is grooved to reduce friction and increase its efficiency. This plunger contains all the best and latest improvements.

Sizes and Prices of Cylinders

Iron Cylinders		Brass Body Cylinders		Cylinder with Brass Body or Shell, and Brass Plunger, but with Iron Attachments	
2½ x 9	$ 4 35	1½ x 10	$ 6 50	1½ x 14	$11 00
2¾ x 9	4 70	2 x 10	6 75	2 x 14	11 25
3 x 9	5 00	2½ x 10	7 75	2½ x 14	14 25
3½ x 9	5 60	2¾ x 10	8 25	2¾ x 14	15 00
4 x 9	6 25	3 x 10	8 75	3 x 14	16 00
		3½ x 10	9 25	3¼ x 14	17 25
2½ x 12	6 00				
2¾ x 12	6 50	1½ x 12	7 25	1½ x 16	13 15
3 x 12	7 00	2 x 12	7 50	2 x 16	13 40
3¼ x 12	7 50	2½ x 12	8 50	2½ x 16	15 25
3½ x 12	8 00	2¾ x 12	9 00	2¾ x 16	16 00
4 x 12	9 00	3 x 12	9 50	3 x 16	16 75
4½ x 12	10 00	3¼ x 12	10 00	3¼ x 16	18 25
5 x 12	11 00				
		1½ x 16	8 75	1½ x 18	13 75
2½ x 15	6 75	2 x 16	9 00	2 x 18	14 00
2¾ x 15	7 25	2½ x 16	10 00	2½ x 18	16 00
3 x 15	7 75	2¾ x 16	10 50	2¾ x 18	16 75
3¼ x 15	8 25	3 x 16	11 00	3 x 18	17 50
3½ x 15	8 75	3¼ x 16	11 50	3¼ x 18	18 80
4 x 15	10 00				
4½ x 15	13 00	1½ x 18	9 50	1½ x 20	14 50
		2 x 18	9 75	2 x 20	14 75
2½ x 18	7 50	2½ x 18	10 75	2½ x 20	16 75
2¾ x 18	8 00	2¾ x 18	11 25	2¾ x 20	17 50
3 x 18	8 50	3 x 18	11 75	3 x 20	18 25
3¼ x 18	9 00	3¼ x 18	12 25	3¼ x 20	19 75
3½ x 18	9 50				
4 x 18	10 50	1½ x 20	10 25		
		2 x 20	10 50		
2½ x 20	8 00	2½ x 20	11 50		
2¾ x 20	8 50	2¾ x 20	12 00		
3 x 20	9 00	3 x 20	12 50		
3½ x 20	10 00	3¼ x 20	13 00		
4 x 20	11 00				

Check Valves and Check Valves and Strainers

Fig. 14

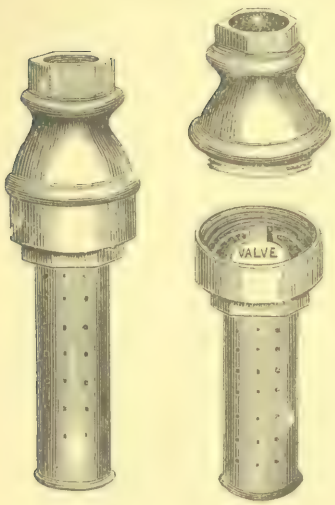


Fig. 14 represents my CHECK VALVE AND STRAINER. The Valve being at the bottom, prevents the water from passing back, and forms a support for that which is in the Suction Pipe, keeping it constantly so near the Piston that the Pump cannot fail to perform its work. They are recommended for use with *all* Pumps.

Fig. 121

Fig. 121 represents a CHECK VALVE, constructed for placing at any point in the suction pipe, for relieving the upper working valves of the column of water in the suction pipe.

All these valves (like the cylinders) are furnished with Brass Valve Seats.

SIZES AND PRICES

No. 1,	Fitted for 1 inch iron pipe		$ 1 25
" 2,	" 1¼ " "	.....	1 50
" 3,	" 1½ " "		1 75

Iron Force Pump, on Base

WITH IRON COCK AND BRASS PLUG

Fig. 33

The above represents my IRON FORCE PUMP ON BASE, with Air-Chamber and two discharges, Iron Cock and Brass Plug, and Revolving Bearer: fitted with connections below the Base for either lead or iron pipe. It is rendered anti-freezing by raising the lever to its full height, thereby tripping the valves, and by opening the cock all water remaining in the air-chamber or pipes above it will be drawn off.

Four sizes of this Pump are made in iron or brass.

SIZES AND PRICES

			Iron	*Brass Cyl.*
No. 0, 2 inch Cylinder	capacity per stroke 1-10 gallon	for 1 inch pipe	$11 75	$15 75
" 1, 2½ " " " "	1-8 " "	1 or 1¼ "	12 50	17 50
" 2, 3 " " " "	1-6 " "	1¼ "	14 50	18 50
" 3, 3½ " " " "	1-4 "	1¼ or 1½ in. pipe	17 50	22 00

IRON FORCE PUMP, DOUBLE DISCHARGE

With Revolving Bearer, and Air-Chamber on Base

Fig. 7

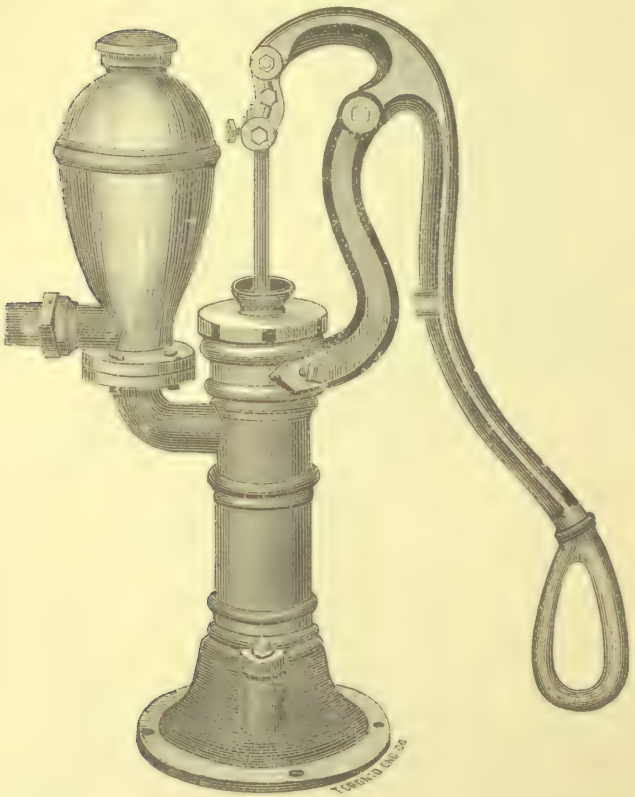


Fig. 7 represents my IRON FORCE PUMP, ON BASE, with Air-Chamber and two Discharges; Revolving Bearer; fitted with connections below the Base for either lead or iron pipe. It will be seen that with this arrangement water can be forced in two, or either of two directions, and to any reasonable distance.

Four sizes of this Pump are made in iron or brass.

SIZES, CAPACITY, AND PRICES

									Iron	*Brass Cyl.*
No. 0,	2 inch	Cylinder	capacity	per	stroke	1-10	gallon	for 1 inch pipe.....	$10 25	$15 00
" 1,	2½ "	"	"	"	"	1-8	"	" 1 or 1¼ "	11 00	16 00
" 2,	3 "	"	"	"	"	1-6	"	" 1¼ "	13 00	17 00
" 3,	3½ "	"	"	"	"	1-4	"	" 1¼ or 1½ in. pipe	16 00	20 50

IRON FORCE PUMP, DOUBLE DISCHARGE

With Revolving Bearer and Air-Chamber, on Plank

Fig. 8

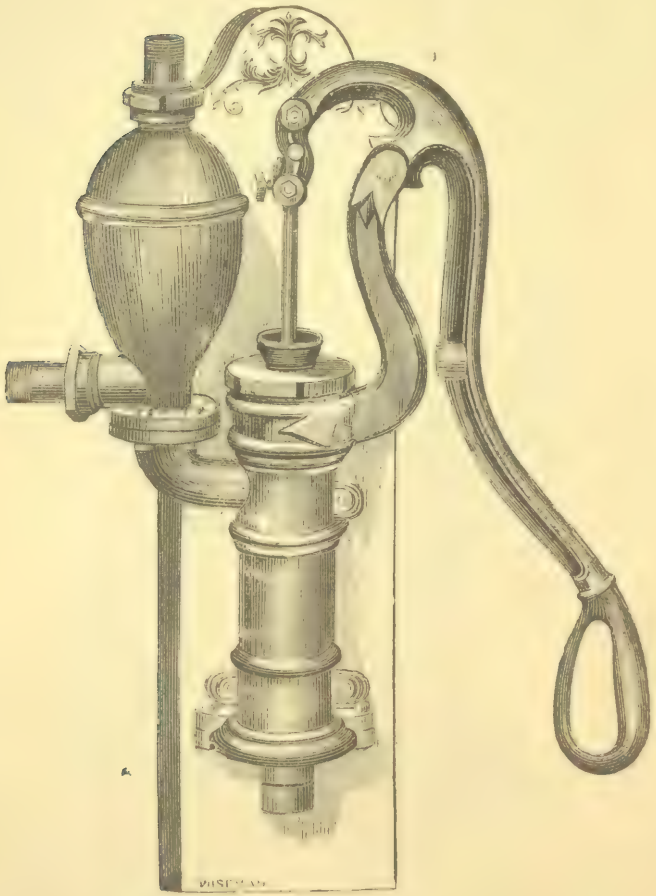


Fig. 8 represents my IRON FORCE PUMP, ON PLANK, with Air-Chamber and two Discharges; Revolving Bearer; fitted with connections for either lead or iron pipe. It is adapted for use in other places where a Base Pump is not convenient, requiring no platform, but can be fastened to the wall or any vertical partition near the well or cistern.

Four sizes of this Pump are made in iron or brass.

SIZES AND PRICES

			Iron	*Brass Cyl.*
No. 0, 2 inch Cylinder	capacity per stroke 1-10 gallon	for 1 inch pipe.....	$10 25	$15 00
" 1, 2½ " " " "	1-8 " "	1 or 1¼ "	11 00	16 00
" 2, 3 " " " "	1-6 " "	1¼ "	13 00	17 00
" 3, 3½ " " " "	1-4 " "	1¼ "	16 00	20 50

Iron Force Pump, on Base

WITHOUT AIR CHAMBER

Fig. 9

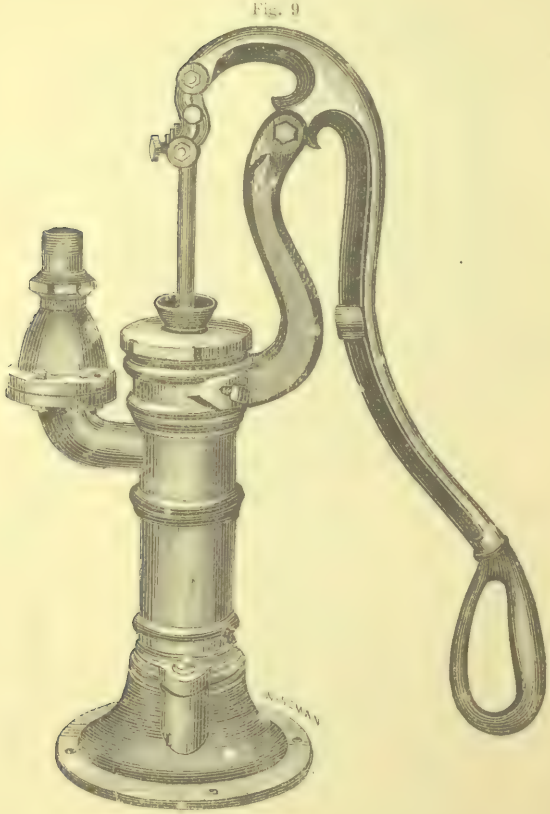


Fig. 9 represents my IRON FORCE PUMP, ON BASE, with Revolving Bearer; fitted with connections below the Base for either lead or iron pipe. This Pump has one vertical outlet.

Four sizes are made in iron or brass.

SIZES, CAPACITY, AND PRICES

			Iron	*Brass Cyl.*
No. 0,	2 inch	Cylinder capacity per stroke 1-10 gallon for 1 inch pipe	$ 8 75	$13 00
" 1,	2½ "	" " " 1-8 " " 1 or 1¼ "	9 50	14 00
" 2,	3 "	" " " 1-6 " " 1¼ "	11 00	15 00
" 3,	3½ "	" " " 1-4 " " 1¼ "	15 00	18 00

Iron Force Pump, on Plank

WITHOUT AIR CHAMBER

Fig. 10

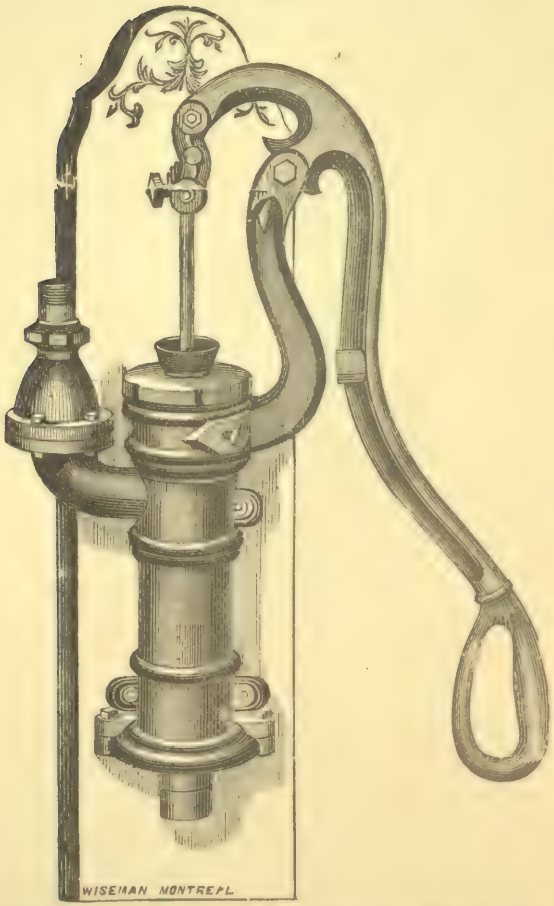


Fig. 10 represents my IRON FORCE PUMP, ON PLANK, with Revolving Bearer: fitted with connections for either lead or iron pipe. It has one vertical outlet, and is adapted for use in places where a Base Pump would not be convenient, requiring no platform, but can be fastened to the wall, a post, or partition near the well or cistern.

Four sizes of this Pump are made, in iron or brass.

SIZES, CAPACITY AND PRICES

					Iron Cyl	*Brass Cyl*
No. 0,	2 inch cylinder,	capacity per stroke	1-10 gal.	for 1 inch pipe	$ 8 75	$13 00
" 1,	2½ "	" "	1-8 "	1 or 1¼ inch pipe.	9 50	14 00
" 2,	3 "	" "	1-6 "	1¼ inch pipe.....	11 00	15 00
" 3,	3½ "	" "	1-4 "	1¼ "	15 00	18 00

Orchard and Garden Force Pump

Fig. 95

The above Pump has been especially manufactured for spraying poisonous liquids on fruit trees, and also for watering gardens and lawns. It has become absolutely necessary for every Fruit Grower to have some means at hand for effectually destroying the Aphis, Canker Worm, Apple Curculio, and other insects that have devastated the orchards and gardens of Canada during the last few years. This Pump is made to supply the requirement, and it has a highly polished iron cylinder, with a round base, tapped out for 1¼ inch pipe. A nickel plated Spray Nozzle, and 6 feet of Hose is furnished with each Pump, unless ordered without. The design is to attach about 2½ feet of 1¼ inch iron pipe to a Pump, then place it on a barrel, and with a cart or wheel-barrow, convey it through the garden or orchard, for use.

SIZES AND PRICES

No. 1, 3 inch cylinder, with 6 feet ¾ inch hose, and Nickel Plated Nozzle.....$12 00
" 1, 3 " " without " " " " 10 00

New Hand Boiler Force Pump

FOR FEEDING STEAM BOILERS

Fig 78

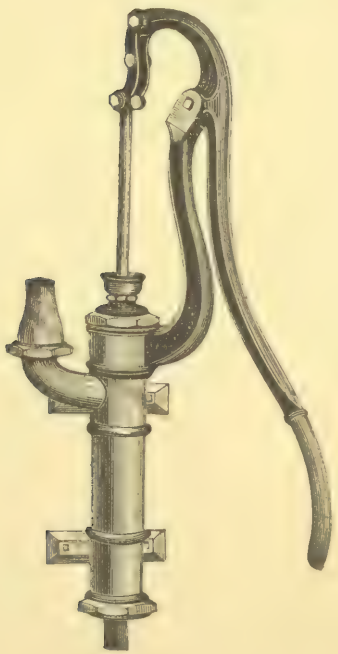


Fig. 78 represents my new STEAM BOILER FORCE PUMP for hand use. It has a Revolving Fulcrum, and is peculiarly adapted for supplying Steam Boilers with water, under pressure. It is furnished with Leather Valves where cold water is to be injected into the Boiler (the brass check-valve on the outlet preventing the water from the Boiler entering the Pump), but I make them with Metallic Valves, when ordered, for forcing hot water.

SIZE AND PRICE

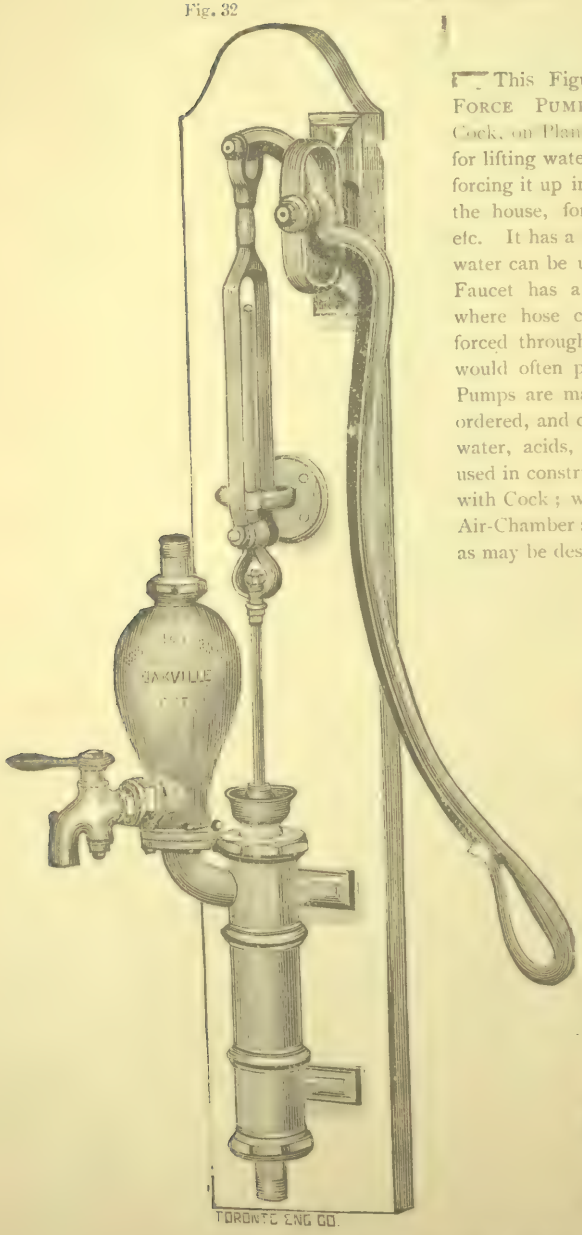
No. 1, 2 inch cylinder, suitable for 1 inch pipe..... .....$12 00

With Metallic Valves and Plunger, add $3.00 net to list.

House Force Pump, on Plank

WITH AIR CHAMBER AND COCK

Fig. 32



This Figure represents my HOUSE FORCE PUMP, with Air-Chamber and Cock, on Plank. It is generally employed for lifting water from wells or cisterns, and forcing it up into a more elevated part of the house, for bath-rooms, filling tanks, etc. It has a Faucet, by means of which water can be used at the Pump, and this Faucet has a thread cut on the outlet, where hose can be attached and water forced through it, which, in case of fire, would often prove very valuable. These Pumps are made right or left handed, as ordered, and can be made for pumping hot water, acids, etc., brass or bronze being used in construction. This Pump is made with Cock; with one Discharge at top of Air-Chamber; or without Air-Chamber, as may be desired.

SIZES AND PRICES

With Cock

No. 1, 2½ inch cylinder

Iron	*Brass Cyl.*	*Brass.*
$19 50	$25 00	$36 00

No. 2, 3 inch cylinder

Iron	*Brass Cyl.*	*Brass*
$21 00	$27 50	$41 00

With one Discharge at Top of Air-Chamber

No. 1, 2½ inch cylinder

Iron	*Brass Cyl.*	*Brass*
$17 00	$20 00	$32 00

No. 2, 3 inch cylinder

Iron	*Brass Cyl.*	*Brass*
$18 50	$25 00	$37 00

Without Air-Chamber

No. 1, 2½ inch cylinder

Iron	*Brass Cyl.*	*Brass*
$15 00	$18 00	$30 00

No. 2, 3 inch cylinder

Iron	*Brass Cyl.*	*Brass*
$16 50	$23 00	$35 00

With ALL BRASS Cock add $2.00 to list

Railroad Iron Force Pump

WITH AIR CHAMBER

Fig. 31

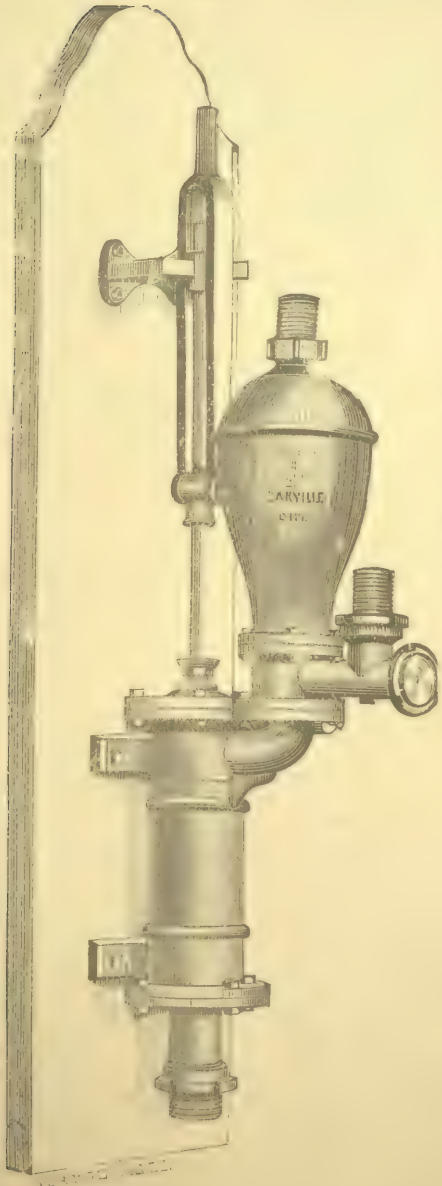


Fig. 31 represents my RAILROAD IRON FORCE PUMP, arranged for, and to be run by power. It is mounted on Plank, and is built very strong and heavy, and fitted with Leather Valves and Packings. It has no equal for forcing water into Tanks for Railroads, Distilleries, Breweries, Tanneries, etc.

For pumping hot water and liquids, it is fitted with Metallic Valves and Packings.

SIZE AND PRICE

No. 1, 4½ inch calibre, suitable for 2 inch pipe $40 00

Fitted with Metallic Valves and Plunger, add $10.00 to list.

Length of stroke, 10 inches.

Double-Acting Railroad Force Pump

ARRANGED FOR HAND OR POWER

Fig. 120

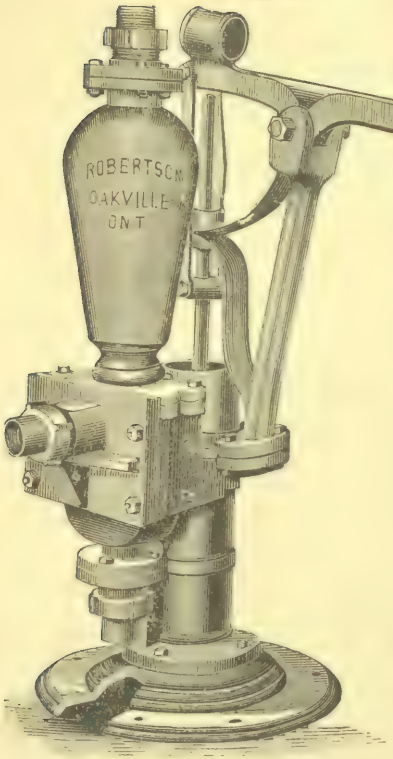


Fig. 120 represents my DOUBLE ACTING FORCE PUMP, designed especially for the use of Railroads, Distilleries, Paper Mills, Etc., or for other parties who require a very powerful, substantial, and reliable Pump to raise a large quantity of water for fire protection or other purposes.

These Pumps are so constructed that all parts are easy of access in case of necessity. All the valves are bronze. The valve seats are also of bronze, screwed in, and can be readily taken out and replaced at any time by simply removing the face plate, without disturbing any other part of the Pump. The induction and eduction pipes can be attached or detached without any trouble, as all the joints are in plain sight on the front of the Pump. The piston-rod is of gun-metal, with solid cross-head. The cylinders are bored and polished equal to any steam engine cylinder. The stuffing-box is surrounded by an oil or water chamber, which prevents the admission of air into the Pump on the downward stroke.

SIZES, CAPACITY, AND PRICES

	Iron	*Brass Lined Cyl.*
No. 1, 3 inch cylinder, 8 inch stroke, for 1½ inch pipe.....	$65 00	$75 00
" 2, 4 " " 8 " " 2 "	75 00	85 00

Improved Close-Top Two Cylinder Force Pump

FOR STEAMBOATS, FACTORIES, RAILROADS, ETC.

Fig. 94

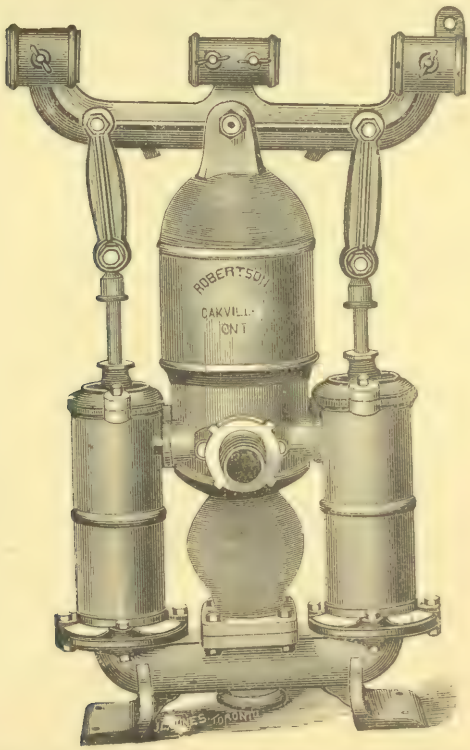


Fig. 94 represents an IMPROVED CLOSE-TOP TWO CYLINDER FORCE PUMP, which attains the highest standard of perfection in Force Pumps. It is constructed with a vacuum chamber on the suction, which is cast in one piece with the discharge air-chamber, and bolted to the bed-plate directly under the air chamber, thus combining two highly valuable additions, viz. : a very strong support to the air chamber, and a cushion of air to receive the shock of the ascending column of water, which otherwise would expend its force upon the suction valves and soon render them useless. With ordinary care it is non-freezing, being constructed with trip-valves, and a plug in the bottom of air chamber. To ease the concussion from the beam at the termination of each stroke, it is furnished with rubber buffers. The valves and stuffing boxes are of brass, and the piston-rods cased with brass. Two wooden levers are furnished with each Pump. The size now made is the regulation size for Canadian steamers. I also make it with iron "folding brakes" of ample length for 8 or 10 men to work.

SIZE, CAPACITY, AND PRICE

	Iron	*Brass Cyl.*
4 inch cylinder, capacity per stroke 5-7 gal. for 2 inch pipe. $1\frac{1}{2}$ inch hose. .	$55 00	$80 00

Iron Folding Brakes, extra $20 00

Hand Rotary Force Pump

Fig. 79

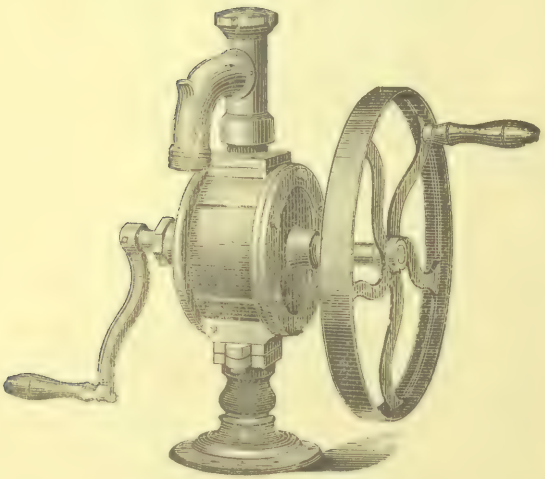


Fig. 79 represents my HAND ROTARY FORCE PUMP, designed for forcing Liquids into Tanks, Washing Windows and Carriages, or for use wherever an ordinary Force Pump is desired.

This Pump is fitted with Goose Neck, with two discharges, one tight and one open nut, and Brass Tube for attaching hose or pipe. The open nut can be attached at the upper orifice to pipe leading to Tank, and by attaching or removing the tight nut at the lower orifice, water can be forced above or drawn below, as desired. By having hose and discharge pipe this Pump is also a very efficient Fire Engine, by being at hand ready for use in its incipient stages, might prevent an extensive conflagration.

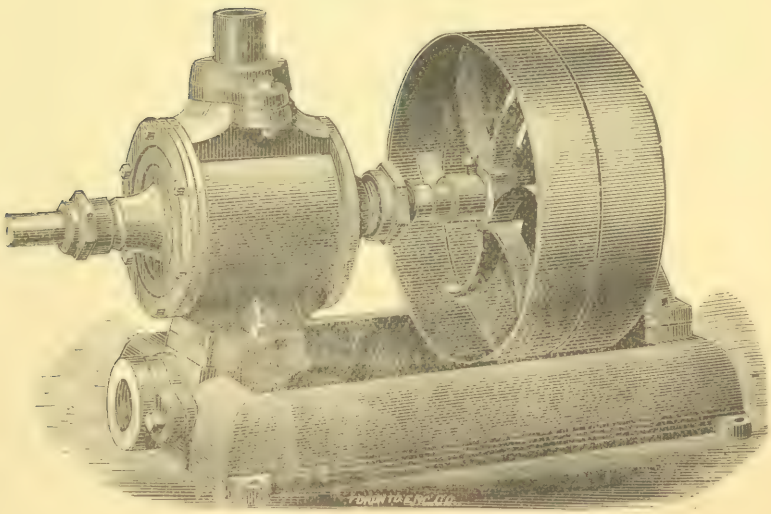
Capacity, 20 gallons per minute; Suction, 1¼ inch; Discharge, 1 or 1¼ inch.

PRICES

	Iron	*Bronze*
No. 1, with 2 Cranks, without Goose Neck	$18 00	
" 1, " 1 Crank and Balance Wheel, with Goose Neck	20 00	$40 00
" 1, " 1 " and Balance Wheel, with Goose Neck and 3 feet Hose and Discharge Pipe	22 00	45 00

ROTARY POWER PUMP

Fig. 80



The above cut represents my ROTARY POWER PUMP, designed for use where power can be applied, for supplying Boilers and Tanks, and for Breweries, Tanneries, Distilleries, Oil Refineries, Cider Mills, Paper Mills, Mines, Etc.

Arranged on Frame with Tight and Loose Pulleys.

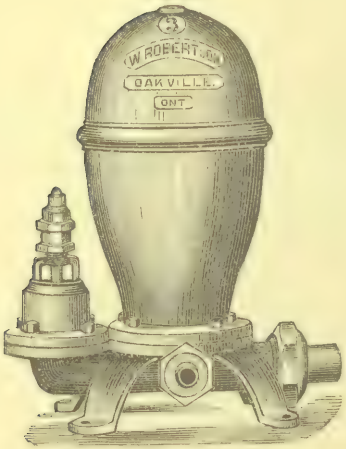
SIZES AND PRICES

	Capacity per Minute	*Revolutions per Minute*	*Suction*	*Discharge*	*Iron*	*Bronze*
No. 3	30 to 50	200	1½ inch	1¼ inch	$ 50 00	$ 75 00
" 5	150 to 200	150	3 to 4 inch	2½ to 3 inch	125 00	150 00

The size of the Pulleys is as follows: No. 3, 11 inches; No. 5, 16 inches.

HYDRAULIC RAMS

Fig. 93



The above cut shows my HYDRAULIC RAM, ready to be set up and put in practical operation, and as it is sent into the market.

The Ram is now extensively used for supplying Dwellings, Barnyards, Gardens, Factories, Engines, Etc., with Running Water, and also for irrigating lands. The simplicity of the operation of this machine, together with its effectiveness and very apparent durability, renders it decidedly the most important and valuable apparatus yet developed in Hydraulics, for forcing a portion of a running stream of water to any elevation, proportionate to the fall obtained. It is perfectly applicable where no more than eighteen inches fall can be had ; yet the greater the fall applied, the more powerful the operation of the machine, and the higher the water may be conveyed. The relative proportions between the water raised and wasted is dependent entirely upon the relative height of the spring or source of supply above the Ram, and the elevation to which it is required to raise, the quantity raised varying in proportion to the height to which it is conveyed with a given fall ; also the distance to which the water has to be conveyed, and consequent length of the pipe, has some bearing on the quantity of water raised and discharged by the Ram, as the longer the pipe through which the water has to be forced by the machine, the greater the friction to be overcome, and the more the power consumed in the operation ; yet it is common to apply the Ram for conveying the water distances of one or two hundred rods, and up elevations of one and two hundred feet. Ten feet fall from the spring or supply to the Ram is abundantly sufficient for forcing up the water to any elevation under, say, one hundred and fifty feet in height above the level of the point where the Ram is located ; and the same ten feet fall will raise the water to a much higher point than above last named, although in a diminished quantity, in proportion as the height is increased. When a sufficient quantity of water is raised with a given fall, it

is not advisable to increase said fall, as, in so doing, the force with which the Ram works is increased, and the amount of labor which it has to perform greatly augmented, the wear and tear of the machine proportionately increased, and the durability of the same lessened, so that economy in the expense of keeping the Ram in repair would dictate that no greater fall should be applied for propelling the Ram than is sufficient to raise a requisite supply of water to the place of use.

To enable any person to make the calculation as to what fall would be sufficient to apply to the Ram to raise a sufficient supply of water to his premises, it should be stated that in conveying it an ordinary distance of, say fifty or sixty rods, it may be safely calculated that about one-seventh part of the water can be raised and discharged at an elevation above the Ram five times as high as the fall which is applied to the Ram, or one-fourteenth part can be raised and discharged, say ten times as high as the fall applied; and so in that proportion as the fall or rise is varied. Thus, if the Ram be placed under a head or fall of five feet, of every seven gallons drawn from the spring one may be raised twenty-five feet, or half a gallon fifty feet, or with ten feet fall applied to the machine, of every fourteen gallons drawn from the spring, one gallon may be raised to the height of one hundred feet above the machine, and so in like proportion as the fall or rise is increased or diminished.

The quantity of water drawn from the spring may be varied by means of the Adjuster on the machine, and which will be found of very great utility, especially when used in connection with springs or brooks that are varied and affected by the drouth and rains.

If the stream is a large one, and a greater supply of water be required than what one of the machines will supply, then increase the number of the machines (in preference to having one machine of a larger capacity than named). Several Rams may be set so as to play into one discharge pipe; each Ram having a separate drive pipe applied from spring to Ram.

To keep the Ram out of the way of frost or other injury, place it in a pit two or three feet deep, or sufficient to cover it from frost, with a ditch running from the pit to carry off the waste water, and cover the pipes properly under ground.

These Rams are fitted for either iron or lead pipe.

SIZES AND PRICES

Size of Ram	*Quantity of Water furnished per Minute by the Spring or Brook to which the Ram is adapted*	*Calibre of Pipes*		*Price*
		Drive	*Discharge*	
No. 2	½ gallon to 2 gallons per minute	¾ inch	⅜ inch	$ 9 00
" 3	1 " 4 " " "	1 "	⅜ "	11 00
" 4	2 " 8 " " "	1½ "	½ "	14 00
" 5	3 " 14 " " "	2 "	1 "	22 00

All the above sizes can have a Drive of from 25 to 40 feet, and Discharge to any desired point.

IRON COCKS

With Brass Plugs

Fig. 83

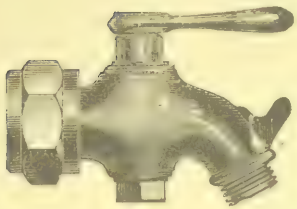


Fig. 83 represents an IRON COCK, suitable (and used at these Works) for the Force Pumps.

Price. .....$3 00 each

GOOSE NECK

Fig. 84

Fig. 84 represents a QUARTER TURN GOOSE NECK, used with the Force Pumps made here.

Price.....$0 40 each

PUMP SPOUT

Fig. 85

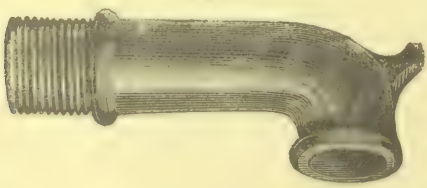


Fig. 85 is a representation of a PUMP SPOUT manufactured by me for use in Wooden Pumps, and which can be obtained at a cost of $4.00 per dozen.

Fig. 86

WELL WHEEL

These Wheels are very useful in raising water from Wells by means of a rope, with a bucket attached to each end, and may be used wherever a pulley block is required. They are neatly japanned before shipment.

Price, 10 inch wheel. .....$12 00 per dozen

Brass Discharge Pipes

SIZES AND PRICES

No. 1, ¾ inch	$1 00
" 2, ⅞ "	1 25
" 3, 1 "	1 50

Brass Hose Couplings

SIZES AND PRICES

No. 1, ¾ inch	$0 80
" 2, ⅞ "	0 90
" 3, 1 "	1 00
" 4, 1¼ "	1 50

3 Ply Rubber Hose

¾ inch	30 cents per foot
1 "	40 " "
1¼ "	50 " "

Pump Foot

Fig. 112

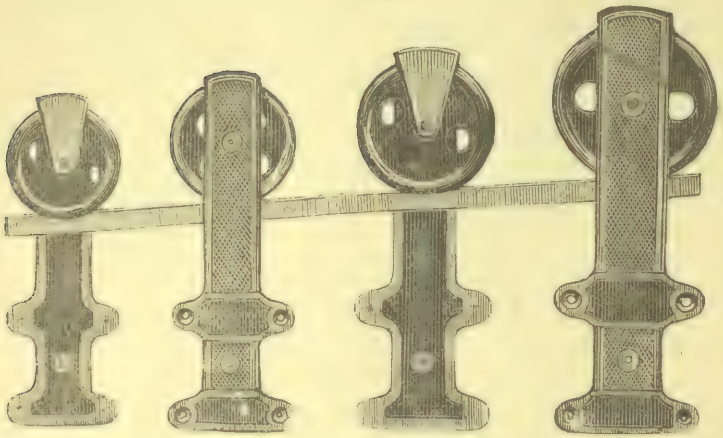
Fig. 112 represents my FOOT, designed for attaching to the bottom of the pipe, and forming a solid rest in the bed of the well, thus supporting the weight. It is strongly recommended for use in deep wells. A thread is cut in a solid disc of iron, into which the pipe is screwed, the pipe being drilled to receive the water some distance above.

PRICE

Pump Foot	$0 70

Double Plate Barn Door Hangers

Fig. 16



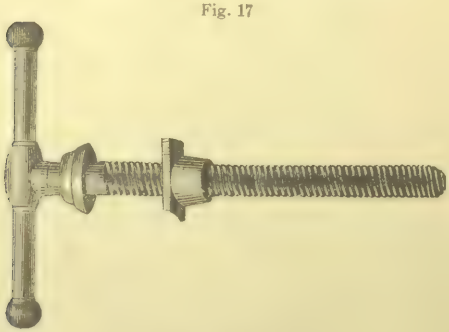
SIZES AND PRICES

No. 2, 4 inch Wheel	$10 80	per dozen
" 3, 5 " "	14 40	"
" 4, 6 " "	18 00	"

Barn Door Rails will be furnished in sections at five cents per foot.

Wrought Iron Bench Screws

Fig. 17



SIZES AND PRICES

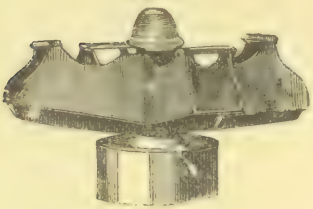
No. 1, 1 inch	$ 8 00	per dozen
" 2, 1⅛ "	9 50	"
" 3, 1¼ "	11 00	"

Packed in cases.

For orders of *full* cases, no charges made for packages.

Revolving Clothes Reels

Fig. 19



Square or Round Base ..... $18 00 per dozen

Boiler Stands

ON STANDARD

Fig. 91

12	inch ring for	30	gallon	copper boiler	$1 70
12½	" "	30	"	galvanized iron boiler	
14	" "	35	"	copper boiler	1 85
14½	" "	35	"	galvanized iron boiler	
16	" "	40	"	copper boiler	2 25
16½	" "	40	"	galvanized iron boiler	

Music Stool Screws

No. 1, ⅞ inch ..... $5 00 per dozen
" 2, 1 " ..... 6 00 " "

Music Stool Legs

THREE TO A SET

No. 1 ..... $6 00 per dozen

Cheese Press Screws

No. 1, 1½ x 20 inches long, cast nut, double thread ..... $3 00 each
" 2, 1½ x 20 " " brass nut, " " ..... 4 00 "

Cider Press Screws

No. 1, 1½ x 20 inches long, cast nut, double thread ..... $3 00 each
" 2, 1½ x 20 " " brass nut, " " ..... 4 00 "

Bolster Plates

12 inch ..... $0 75 per pair

CAST IRON SINKS

With Round Bottom and Square Top

Fig. 15

The nest of Sinks manufactured at this establishment will favorably compare with any made on this continent. They are neatly painted on the inside.

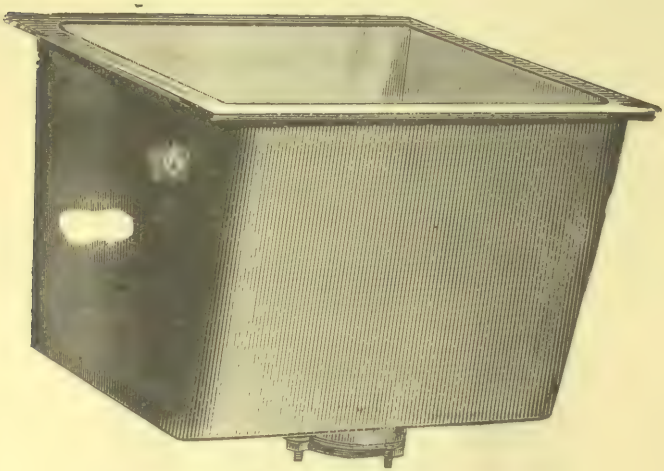
When specially ordered, Sinks will be fitted with combined Strainer and Plug, without additional charge.

SIZES AND PRICES

14 x 25,	depth	5	inches	$2 50	each
16 x 24,	"	6	"	2 70	"
18 x 24,	"	6	"	2 80	"
15 x 27,	"	5	"	2 90	"
18 x 30,	"	6	"	3 60	"
20 x 30,	"	6	"	4 00	"
18 x 36,	"	6	"	4 50	"
22 x 36,	"	6	"	5 50	"
20 x 40,	"	6	"	6 00	"

IRON STOP SINKS

Fig. 90

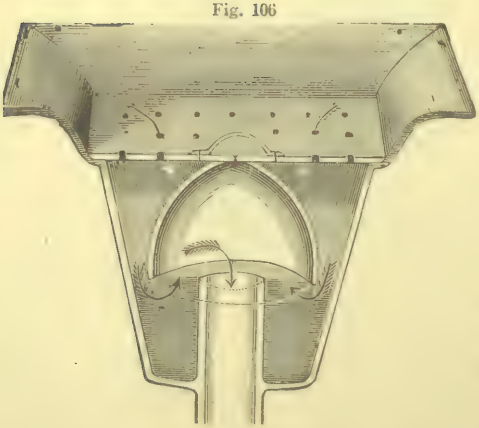


SIZE AND PRICE

Length 16 inches, Width 16 inches, Depth 10 inches.

Price $3 50

Fig. 106



IRON CESSPOOL

With Bell Trap

SIZE AND PRICE

Length 16 inches, Width 16 inches, Depth 10 inches

Price $3 50

SINK FITTINGS

PRICES

Plug Sink Strainers	$3 00 per dozen
Open Sink Strainers	1 50 "
Sink Couplings	1 50 "
Sink Bolts	0 40 "

CAST IRON SOIL PIPE

Plain or Tar Coated

Fig. 35

Single Hub

Fig. 36

Double Hub

3	inch,	5	feet	Lengths	. . .	44	cents	per foot
4	"	5	"	"	. . . . .	50	"	"
5	"	5	"	"	. . . . .	75	"	"
6	"	5	"	"	. . . . .	90	"	"

4 inch, 5 feet Lengths . . . $3 00 each

Tarred Pipes, inside and out, 2 cents per foot extra.
Tarred Fittings, inside and out, 5 cents each extra.

Cast Iron Soil and Water Pipe and Fittings

A specialty of this line of goods has been made at this establishment, and no expense has been spared to place a complete assortment in the market. The Pipe and Fittings are of the very best quality, thoroughly sound, of smooth finish, and uniform in casting.

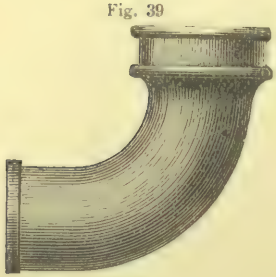
Extra heavy Soil Pipe and Fittings are now very extensively used, and especial attention has been given to this class of goods, so that I am prepared to compete with any maker both in quality and price. The following are the average weights of Extra Heavy Pipe per foot.

3 inch, 9 lbs. 4 inch, 13 lbs. 5 inch, 17 lbs. 6 inch, 20 lbs.

Prices of Extra Heavy Pipe and Fittings will be furnished on application.

Quarter Bends

Fig. 39

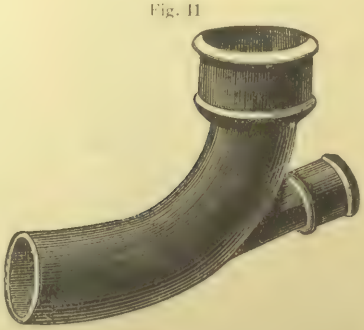


2 inch	.....	$0 60	each
3 "	.....	0 80	"
4 "	.....	1 00	"
5 "	.....	1 50	"
6 "	.....	1 80	"

Quarter Bends

WITH CONNECTION FOR TWO INCH PIPE

Fig. 11

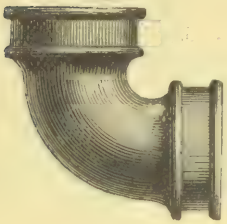


4 inch ....$1 60 each

Quarter Bends

DOUBLE HUB

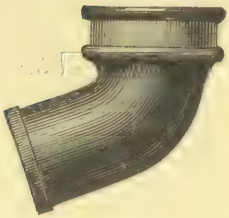
Fig. 40



4 inch .....$1 80 each

Sixth Bends

Fig. 48



2 inch	.....	$0 60
3 "	.....	0 80
4 "	.....	1 00
5 "	.....	1 50
6 "	.....	1 80

Eighth Bends

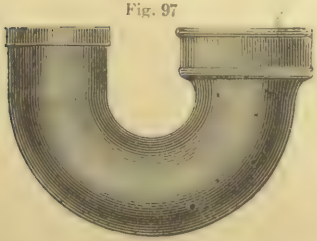
Fig. 47

2 inch	.....	$0 60
3 "	.....	0 80
4 "	.....	1 00
5 "	.....	1 50
6 "	.....	1 80

Return Bends

SINGLE HUB

Fig. 97

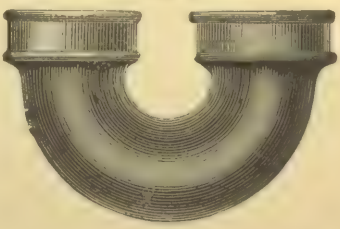


4 inch .....$2 50 each

Return Bends

DOUBLE HUB

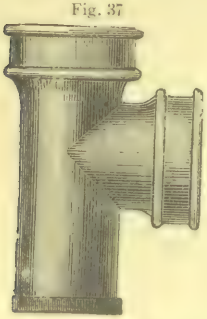
Fig. 59



4 inch .....$2 50 each

T Branches

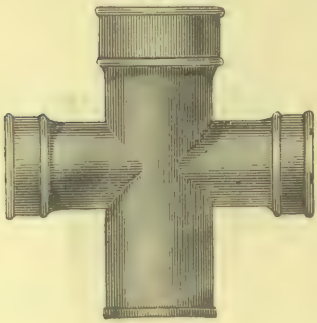
Fig. 37



2 x 2 inches	$0 60	each
3 x 3 "	0 80	"
3 x 2 "	0 80	"
4 x 4 "	1 00	"
4 x 3 "	1 00	"
4 x 2 "	1 00	"
5 x 5 "	1 80	"
5 x 4 "	1 80	"
6 x 6 "	2 15	"

Crosshead Branches

Fig. 98



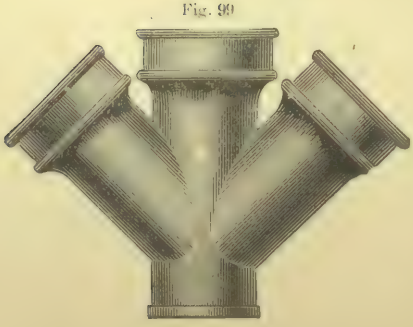
3 x 3 inches	$1 65	each
4 x 4 "	1 90	"
5 x 5 "	2 40	"
6 x 6 "	3 80	"

Long Bends

Fig. 46

4 inches.....$1 80 each

Fig. 99

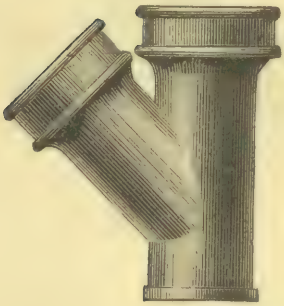


Double Y Branches

2 x 2 inches	$1 50	each
3 x 3 "	1 90	"
4 x 4 "	2 50	"
5 x 5 "	3 45	"
6 x 6 "	4 60	"

Y Branches

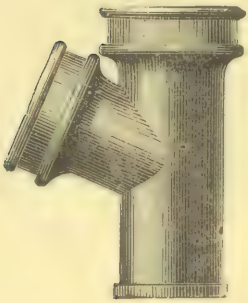
Fig. 38



2 x 2 inches	$0 90 each
3 x 2 "	1 20 "
3 x 3 "	1 20 "
4 x 4 "	1 85 "
4 x 3 "	1 85
4 x 2 "	1 85 "
5 x 5 "	2 45 "
5 x 4 "	2 45 "
6 x 4 "	3 10 "

Half Y Branches

Fig. 45



4 x 4 inches.....$1 85 each

T x Y

4 x 2 — 185

4 x 4 — 185

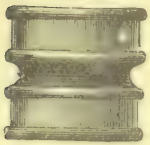
Offsets

Fig. 44

4 inch to offset 2 inch	$1 10 each
4 " " 4 "	1 30 "
4 " " 6 "	1 50 "
4 " " 8 "	1 75 "
4 " " 12 "	2 15 "

Double Hubs

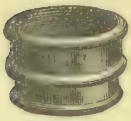
Fig. 43



2 inch	$0 45 each
3 "	0 65 "
4 "	0 95 "
5 "	1 10 "
6 "	1 20 "

Single Hubs

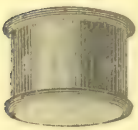
Fig. 42



2 inch	$0 38 each
3 "	0 52 "
4 "	0 60 "
5 "	0 90 "

Straight Sleeves

Fig. 50



4 inch	$0 95 each

Thimbles

Fig. 49

2 inch	$0 20 each
3 "	0 35 "
4 "	0 42 "
5 "	0 50 "
6 "	0 65 "

Reducing Pieces

Fig. 52

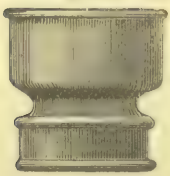
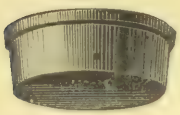


Fig. 53

To reduce from 4 inch to 2 inch	$1 05 each
" " 4 " 3 "	1 05 "
" " 5 " 4 "	1 20 "

Pipe Plugs

Fig. 51



2 inch . . . . . 16 $0 15 each
3 " . . . . . 26 0 25 "
4 " . . . . . 34 0 30 "
5 " . . . . . 44 0 35 "
6 " . . . . . 56 0 50 "

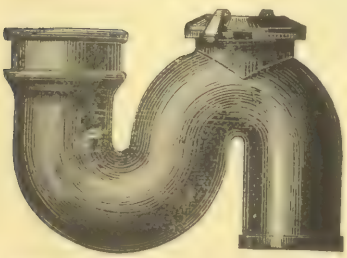
Ventilating Caps

Fig. 100

4 inch . . . . . $1 30 each
5 " . . . . . 1 75 "
6 " . . . . . 2 30 "

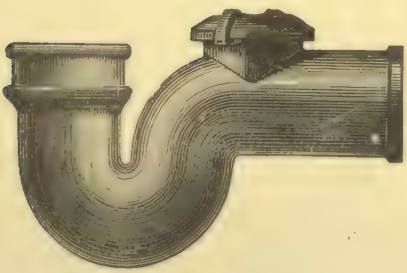
S Traps

Fig. 55



4 inch . . . . . $2 30 each

Fig. 56



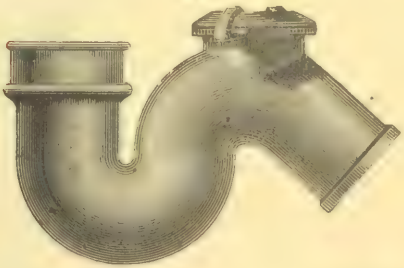
S Traps

OUTLET IN HEEL

4 inch . . . . . $3 10 each

Three-Quarter S Traps

Fig. 101



4 inch . . . . . $2 30 each

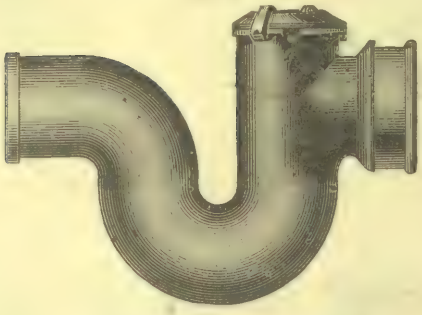
Half S Traps

4 inch . . . . . $2 30 eac

Fig. 54

Running Traps

Fig. 102



4 inch	$2 30 each
5 "	4 60 "
6 "	5 75 "

The above is also made with Hub for 4 inch Vent Pipe, prices as follows

4 x 4	$3 00 each
5 x 4	5 25 "
6 x 4	6 30 "

Pipe Rests

Fig. 103

3 inch	$0 40 each
4 "	0 50 "
5 "	0 60 "
6 "	0 70 "

Green House Pipe, Fittings, Valves, Etc.

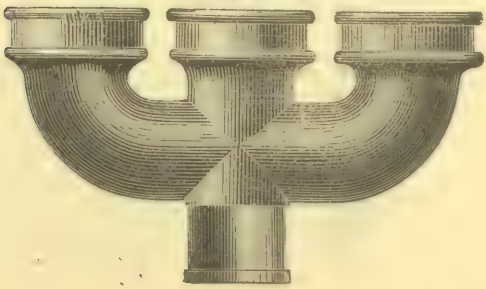
For Green House purposes I make a strong, heavy Iron Pipe, of the following sizes, viz.: 3, 4, 5 and 6 inches, and every length is carefully inspected, and no pipe or fittings allowed to leave the Works unless found perfectly sound and fully equal to any made on the continent.

The following Fittings are manufactured especially for this Green House work, and these taken in connection with the Fittings shown on the pages immediately preceding this, will furnish a very complete assortment.

Three Way Branches

SPIGOT BACK OUTLET

Fig. 57



4 inch ..... $5 00 each

Two Way Branches

SPIGOT BACK OUTLET

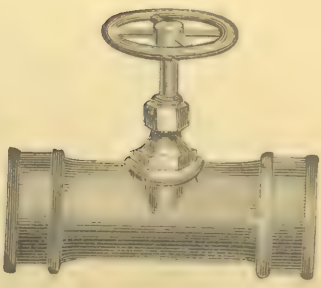
Fig. 58

4 inch ..... $3 00 each

Stop Valve

WITH HUBS

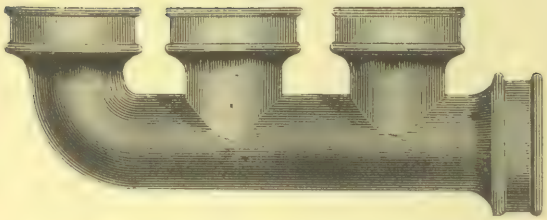
Fig. 60



4 inch $13 00 each

Triple Elbow

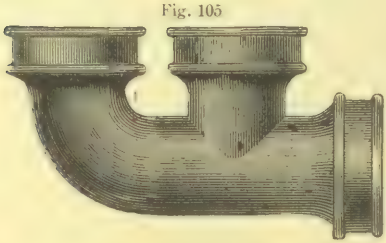
Fig. 104



4 inch $5 00

Double Elbow

Fig. 105



4 inch $3 50

PIPE CHAIRS

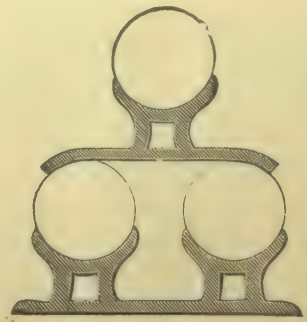
Two Pipes

Fig. 61

Per Set $1 00

Three Pipes

Fig. 62



Per Set $2 00

THE "AQUILA" WIND MILL

Scientific men, some time since, gave us an idea of the value of Wind as a Motive Power, and as one of the results WIND MILLS are now to be seen in every section of the country. Many of these machines have proven disastrous failures both to the purchaser and manufacturer owing in some case to their liability to be blown down or disabled in violent storms; in others to the small supply of water furnished during the season of calms, and their slow motion in very light winds.

Since the "AQUILA" Wind Mill has been brought into practical use as a labor-saving machine, it has become deservedly popular and highly appreciated, and the following reasons are advanced as the cause of such satisfaction.

1. Its construction is simple, complete, and will not get out of order.

2. It runs steadily and noiselessly.

3. It has only three joints, while many others have as high as 90 and 100. A very obvious advantage.

4. It has anti-friction balls upon which it revolves on its axis.

5. It is arranged with a Governing Power, which will automatically secure a safe and steady motion in case of high winds, squalls or storms, and in this answers precisely the same purpose as a governor on a steam engine, regulating speed and equality under any pressure.

6. The Spider is firmly keyed to the Shaft, which rotates in well babbitt lined boxes on the lower table.

7. Every machine is manufactured of the very best materials, and although good, substantial work costs more, experience has taught the lesson that it is appreciated, and consequently is the cheapest to the manufacturer in the end.

To Farmers, Stockmen, and all who need a full supply of water at any and all times and seasons, the "Aquila" Wind Mill cannot be too highly recommended.

Further particulars will be at once furnished upon receipt of communication.

PRICES

10 feet Wheel.....$60 00

12 feet Wheel.....$75 00

Sectional Views of Pumps

In ordering Parts for repairs, please designate them as shown below.

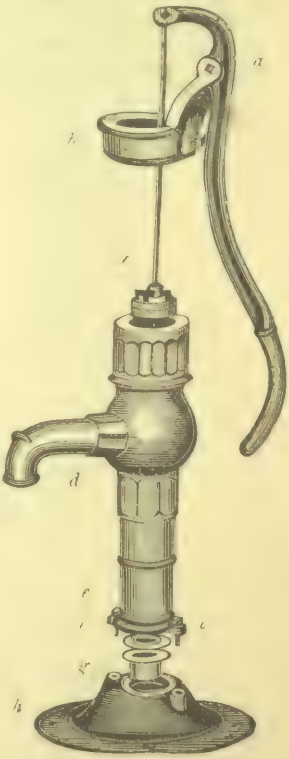
Pitcher Pump

a Lever
b Plunger and Rod
c Bearer
d Cylinder
e Set Screw
f Lower Valve
g Base Bolts
h Base
k Suction Nut and Tube

Set Length

a Gas Pipe or Set Length
b Upper Nut or Cap
c Cylinder
d Valve Seat or Bottom Nut

Cistern Pump



a Lever
b Cap
c Plunger and Rod
d Cylinder
e Base Bolts
f Lower Valve
g Brass Valve, Seat and Tube
h Base

The part shown as *d* in the above Pumps is known as Stock or Barrel in Well Pumps.

For complete list of repairs, see next page

PRICE LIST OF REPAIRS

Levers or Handles

Pitcher and Cistern Pump, Figs. 20, 75, 21 and 116	$0 75
Drive and Shallow Well Pumps, Figs. 114, 108, 115 and 107	0 75
Well Pumps, Figs. 24 and 113	1 00
" " " 117	1 25
" " " 76	1 50
Force Pumps, Figs. 6, 118, 30, 111, 119, 33, 7, 8, 9, 10, 95 and 32	1 50
Force Pumps, Figs. 109, 110 and 78	1 00

Fulcrums or Bearers

Pitcher and Cistern Pumps, Figs. 20, 75, 21 and 116	$0 75
Drive and Shallow Well Pumps, Figs. 114 and 107	0 75
Drive and Shallow Well Pumps, Figs. 108 and 115	1 25
Well Pumps, Figs. 24 and 113	1 00
" " " 117 and 76	1 75
Force " " 6, 33, 7, 8, 9, 10, 95 and 78	1 50
Force Pumps, Figs. 118, 30, 111 and 32	1 75
Force Pumps, Figs. 109 and 110	1 00

Bases

Pitcher and Cistern Pumps, Figs. 20, 75, 21 and 116	$1 00
Well Pumps, Fig. 24	1 00
" " " 76, 6, 118 and 30	1 50
Force " " 33, 7, 8, 9, 10 and 95	1 50

Plungers with Rods

Pitcher and Cistern Pumps, Figs. 20, 75, 21 and 116	$1 00

Plungers Only

Pitcher and Cistern Pumps, Figs. 20, 75, 21 and 116	$0 75
Shallow Well Pumps, 2½ inches	1 50
" " " 3 "	1 70

Plungers Only (continued)

Shallow Well Pumps, 3½ "	2 00
" " " 4 "	2 40
Deep " " 2½ "	1 50
" " " 3 "	1 95
" " " 3½ "	2 40
" " " 4 "	2 90

Cylinders or Stocks

Pitcher and Cistern Pumps, Figs. 20, 75, 21 and 116	$1 75
Drive and Shallow Well Pumps, Figs. 114, 108, 115 and 107	2 75
Well Pumps, Fig. 24	3 00
" " " 113 and 117	3 25
" " " 76	4 00
Well Force Pumps, Fig. 6	4 00
" " " " 118, 30 and 111	5 00
House Force Pumps, Figs. 33, 7, 8, 9, 10, 95, 78 and 32	3 00

Air Chambers

For all Force Pumps	$3 00

Cylinder Caps

For 2½, 3 and 3½ inches	$0 75
" 3½, 4 and 4½ "	0 90

Cylinder Bottoms

For 2½ and 3 inches	$0 75
" 3½, 4 and 4½ inches	1 25

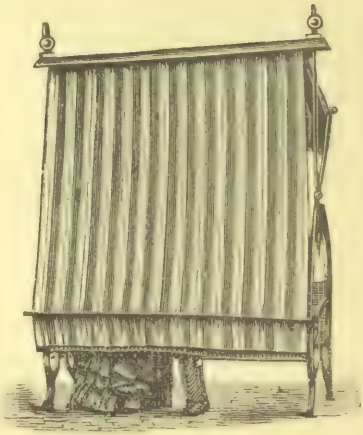
Caps and Stuffing Boxes

For all Force Pumps, Caps	$0 65
" " " Stuffing Boxes	1 00

Miscellaneous

Connecting Nuts for Iron Pipe	$0 35
Brass Soldering Tubes	0 35
Valves	0 35
Packings	0 35

SHIFTING CANOPY LAWN SEAT



The above cuts represent my SHIFTING CANOPY LAWN SEAT, one of the most elegant and ornamental Lawn Seats manufactured. It is made of iron with hardwood slats and rollers, painted, varnished, and finished in the most attractive manner. The awning is of cloth, bound with scarlet fringe. By means of a cord and tassel, the occupants of the seat can regulate the canopy to any position desired, as shown in the illustrations, and when drawn up for the night it is protected from the weather by an iron screen or cover. It is made very strong and durable, and will be found an article of comfort and ornament on any well kept lawn.

Price, complete.....$25 00